



Steven M. Neuhaus
County Executive

DEPARTMENT OF HEALTH

Eli N. Avila, MD, JD, MPH, FCLM
Commissioner of Health

124 Main Street
Goshen, New York 10924-2199

Environmental Health

(845) 291-2331
Fax: (845) 291-4078

December 5, 2014

Mrs. Rita Smith
POB 82
197 Wheeler Rd.
Florida, NY 10921

Re:
Blackbear Campground
Sewage Disposal System
T. Warwick

Dear Mrs. Smith:

Plans for a sewage disposal system to serve the above referenced facility prepared by MJS Eng. & L.S., and dated 2/4/14, latest revision 9/2/14, are approved. The Design Basis for this approval is as follows: 12,576 gpd based on Outfall A: 1950 gpd + Outfall B: 4,425 gpd + Outfall C: 4,500 gpd + Outfall 3: 1,500 gpd + swimming pool backwash: 201 gpd

You accept and agree to abide by and conform with the following:

1. THAT the proposed facilities be installed in conformity with said plans.
2. THAT the sewage disposal facilities shall be inspected for compliance with the approved plans at the time of construction by a P.E., R.A., or exempt L.L.S. and that written certification to that effect shall be submitted to this Department and Local Building Code Enforcement Officer within 30 days and prior to occupancy.
3. THAT wells and sewage treatment systems shall no longer be constructed when public facilities become available. Connection to the public sewerage systems is required within one (1) year of the system(s) becoming available.
4. THAT plan approval is limited to 5 years. Time extensions for approval may be granted by the Orange County Department of Health based upon development facts and the regulations in effect at that time. A new plan submission may be required to obtain a time extension.

Page -2-

5. THAT all local and state agency rules and regulations be complied with.

Plans bearing the stamp of approval have been forwarded to the design engineer for delivery to you. The engineer, or other design professional, is now responsible for submitting scanned copies of the approved documents to the OCHD within 30 days. These documents should be submitted using the email address that has been provided for entry into our Sharefile system. Failure to submit these documents may delay our review and/or approval of subsequent projects.

Very truly yours,



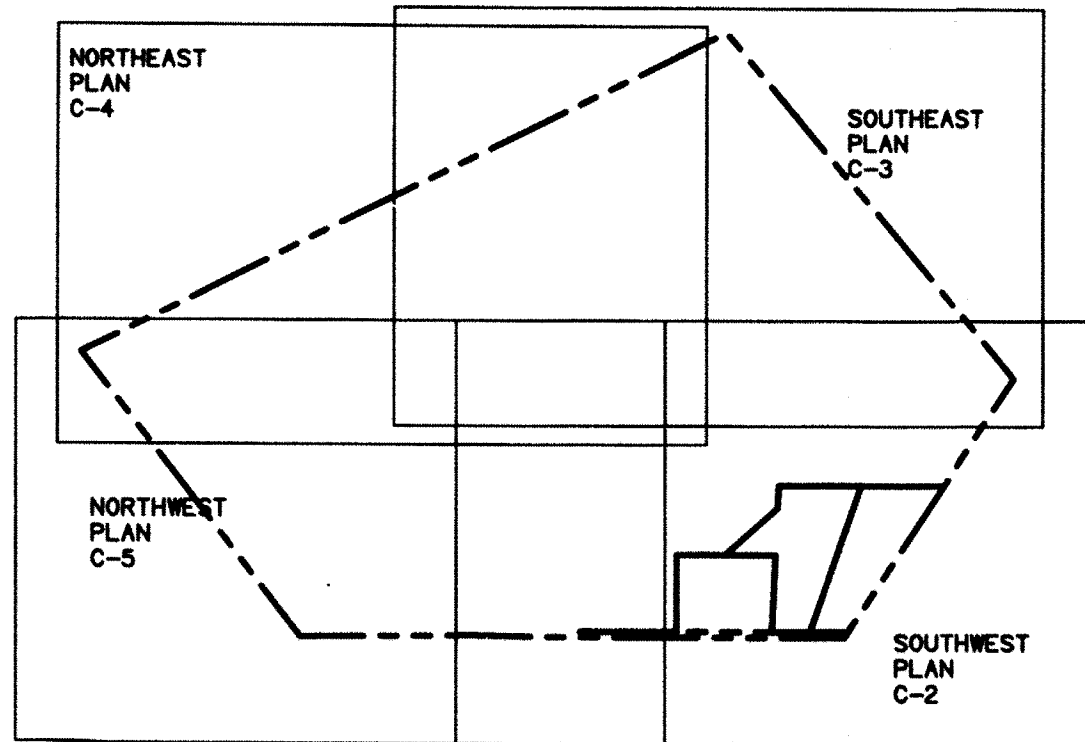
Edwin L. Sims, P.E.
Acting Dir. of Env. Health/
Principal Public Health Engineer

ELS/ajc

cc: Engineer ✓
Building Inspector
File

GENERAL NOTES:

1. RECORD OWNER AND APPLICANT:
HOWARD SMITH
BLACK BEAR CAMPGROUND
PO BOX 82
197 WHEELER ROAD
FLORIDA, NY 10921
2. TAX MAP NUMBER:
SECTION 8, BLOCK 2, LOT 27.14
3. DEED REFERENCE:
S-B-L 8-2-27.14 LIBER 2264, PAGE 817
4. AREA:
51.8± ACRES
5. ZONING DISTRICT: RU RURAL
6. LOT AREA: 10 AC
FRONT YARD: 100' MIN.
SIDE YARD: 50' MIN.
REAR YARD: 100' MIN.
STREET FRONTAGE: 200' MIN.
BUILDING HEIGHT: 35' MAX.
BUILDING COVERAGE: 30%
7. BASE MAP INFORMATION TAKEN FROM THE FOLLOWING SOURCE:
A. BOUNDARY TAKEN FROM "SUBDIVISION OF LANDS OF HOWARD SMITH & JOHN P. SEEKAMP, TOWN OF WARWICK, ORANGE COUNTY, NEW YORK, PREPARED BY CHARLES V. WALLACE, L.S., DATED DECEMBER 8, 1980.
B. TOPOGRAPHIC DATA TAKEN FROM "TOPOGRAPHIC MAP OF TAX MAP LOTS 8-2-27.11-27.14, TOWN OF WARWICK, ORANGE COUNTY, NEW YORK, PREPARED BY MAPCO, WEST MILFORD, NEW JERSEY, DATED SEPTEMBER 23, 2008
C. UTILITIES FIELD LOCATED BY MJS ENGINEERING & LAND SURVEYING, P.C., OCTOBER, 2008
8. CALL BEFORE YOU DIG UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION TWO (2) FULL WORKING DAYS BEFORE YOU DIG. CALL 1-800-982-7982.
9. IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATIONS AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

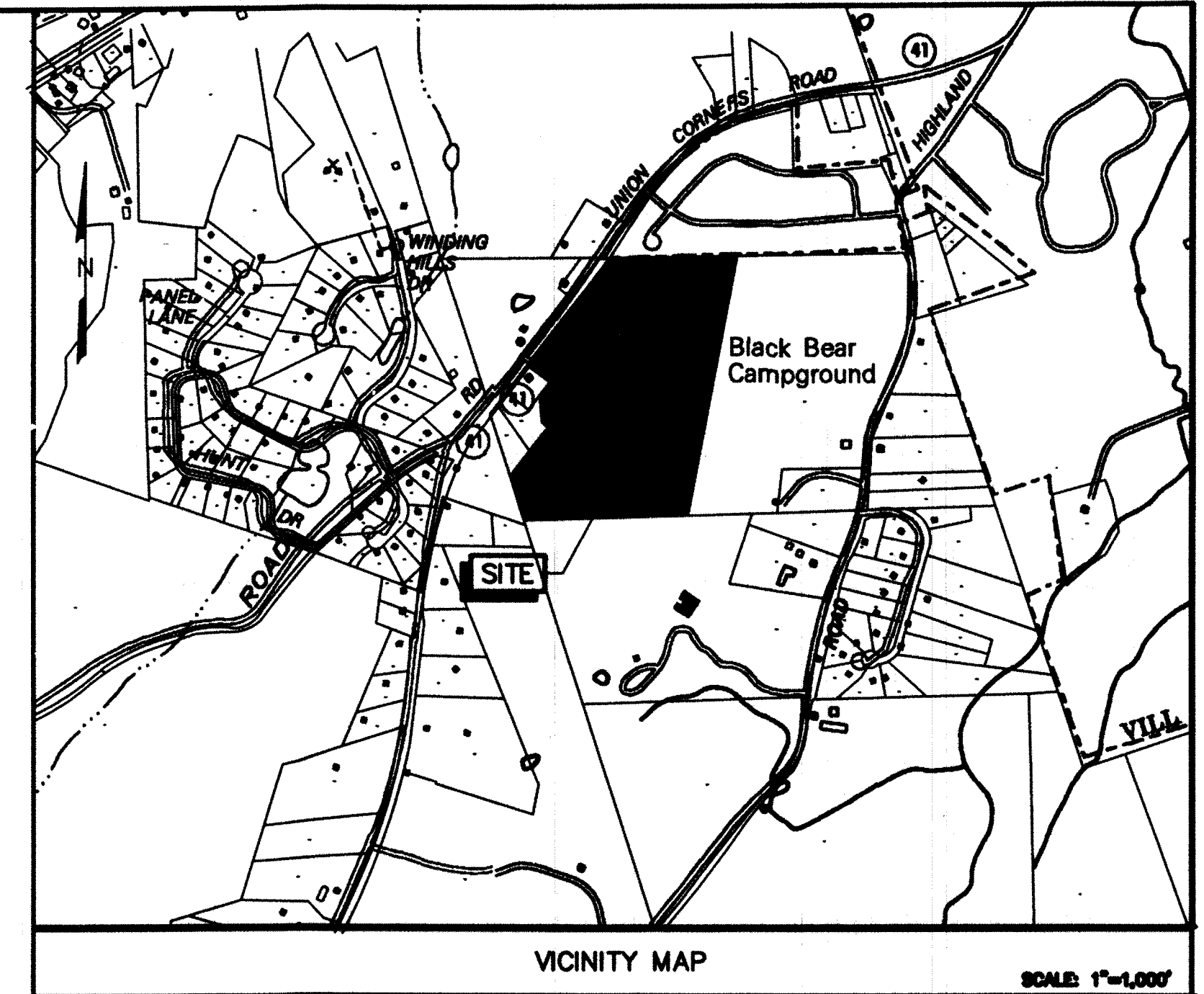


SHEET INDEX

SCALE: 1"=500'

ORANGE COUNTY HEALTH DEPARTMENT NOTES

1. NO LOT IS TO BE FURTHER SUBDIVIDED WITHOUT ORANGE COUNTY DEPARTMENT OF HEALTH REVIEW AND APPROVAL.
2. THE DESIGN AND LOCATION OF SANITARY FACILITIES (WATER AND SEWER SYSTEMS) SHALL NOT BE CHANGED.
3. ALL WELLS AND SEPTIC SYSTEMS WITHIN 300 FEET OF THIS PROJECT HAVE BEEN LOCATED AND ARE SHOWN ON THE PLANS.
4. THERE SHALL BE NO REGRADING IN THE AREA OF THE ABSORPTION FIELDS.
5. HEAVY EQUIPMENT SHALL BE KEPT OFF THE AREA OF THE ABSORPTION FIELDS EXCEPT DURING THE ACTUAL CONSTRUCTION. THERE SHALL BE NO UNNECESSARY MOVEMENT OF CONSTRUCTION EQUIPMENT ON THE ABSORPTION FIELD BEFORE, DURING, OR AFTER CONSTRUCTION. EXTREME CARE MUST BE TAKEN DURING THE ACTUAL CONSTRUCTION SO AS TO AVOID ANY UNDE COMPACTION THAT COULD RESULT IN A CHANGE OF THE ABSORPTION CAPACITY OF THE SOIL WHICH THE DESIGN WAS BASED.
6. NO SWIMMING POOLS, DRIVEWAYS, OR STRUCTURES THAT MAY COMPACT THE SOIL SHALL BE LOCATED OVER ANY PORTION OF THE ABSORPTION FIELD.
7. SEPTIC TANKS SHOULD BE INSPECTED PERIODICALLY AND PUMPED EVERY 2-3 YEARS.
8. DOSING CHAMBERS SHOULD BE INSPECTED PERIODICALLY BY A PROPERLY TRAINED PERSON FOR PROPER OPERATION, INCLUDING VENTING AND ANY PHYSICAL DAMAGE.
9. DISTRIBUTION BOXES/DROP BOXES SHOULD BE INSPECTED PERIODICALLY TO ASSURE THAT THEY ARE LEVEL AND OPERATING PROPERLY.
10. THERE MUST BE AN UNINTERRUPTED POSITIVE SLOPE FROM THE SEPTIC TANK (OR ANY PUMPING OR DOSING CHAMBER) TO THE SEWER CONNECTION, ALLOWING SEPTIC GASES TO DISCHARGE.
11. A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER SHALL INSPECT THE SANITARY FACILITIES (WATER SUPPLY, ANY WATER TREATMENT AND SEWAGE DISPOSAL FACILITIES) AT TIME OF CONSTRUCTION. PRIOR TO OCCUPANCY OF THE HOUSE, THE ENGINEER SHALL CERTIFY TO THE ORANGE COUNTY DEPARTMENT OF HEALTH AND THE LOCAL CODE ENFORCEMENT OFFICER THAT THE FACILITIES ARE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND THAT SEPTIC TANK JOINTS ARE SEALED AND TESTED FOR WATER TIGHTNESS.
12. INDIVIDUAL WELLS AND SEWAGE DISPOSAL SYSTEMS SHALL NO LONGER BE CONSTRUCTED OR USED FOR HOUSEHOLD DOMESTIC PURPOSES WHEN PUBLIC FACILITIES BECOME AVAILABLE. CONNECTION TO THE PUBLIC SEWER SYSTEM IS REQUIRED WITHIN 1 YEAR OF AVAILABILITY.
13. ORANGE COUNTY DEPARTMENT OF HEALTH PLAN APPROVAL IS LIMITED TO 5 YEARS. TIME EXTENSIONS FOR PLAN APPROVAL MAY BE GRANTED BY THE ORANGE COUNTY DEPARTMENT OF HEALTH BASED UPON DEVELOPMENT FACTS AND THE OTHER REGULATIONS IN EFFECT AT THAT TIME. A NEW PLAN SUBMISSION MAY BE REQUIRED TO OBTAIN A TIME EXTENSION.

SEPTIC DESIGN BASIS
PROPOSED SYSTEM A: 26 SEWERED CAMP SITES

FLOW: (26) 75 GPD/SITE = 1,925 GPD
SEPTIC TANK REQUIRED 1.5 X 1925 = 2,888
3,000 GALLON SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 15-20 MIN/INCH
APPLICATION RATE: 0.70 GPD/SF
AREA REQUIRED: 1950/70 = 2,786 SF
LINEAR FEET TRENCH REQUIRED: 2,786/2 = 1,393 LF
USE 14 TRENCHES AT 100 FT. = 1,400 LF
2 FIELDS 700 LF EACH
DOSE VOLUME REQUIRED:
100% VOL: 700 LF X 0.653 GAL/LF = 457 GAL PER FIELD
75% = 457 GAL X 0.75 = 343 GAL - 85% = 457 GAL X 0.85 = 389 GAL
PROVIDE FLOUT DOSING TANK AS PER DETAIL C-7/7 12" DRAW
SYSTEM TO BE ALTERNATELY DOSED

SEPTIC DESIGN BASIS
PROPOSED SYSTEM B: 59 SEWERED CAMP SITES

FLOW: (59) 75 GPD/SITE = 4,425 GPD
SEPTIC TANK REQUIRED 1.5 X 4,425 = 6,638 GAL
7,000 SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 21-45 MIN/INCH
APPLICATION RATE: 0.50 GPD/SF
AREA REQUIRED: 4,425/0.50 = 8,850 SF
LINEAR FEET TRENCH REQUIRED: 8,850/2 = 4,425 LF
FOUR FIELDS WITH 885 LF OF TRENCH - 4,425 LF TOTAL
USE 10 TRENCHES AT 90 FT. = 900 LF
SYSTEM TO BE SEQUENTIALLY DOSED:
100% LINE VOLUME: 900 LF X 0.653 = 588 GAL
75% = 0.75x 588 = 441 GAL - 85% = 0.85x 588 = 500 GAL
CUE BOX SIPHON CHAMBER SEE DETAIL, PROVIDE 14" DRAW=480 GAL/DOSE

SEPTIC DESIGN BASIS
PROPOSED SYSTEM C: 60 SEWERED CAMP SITES

FLOW: (60) 75 GPD/SITE = 4,500 GPD
SEPTIC TANK REQUIRED 1.5 X 4,500 = 6,750
7,000 SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 21-30 MIN/INCH
APPLICATION RATE: 0.60 GPD/SF
AREA REQUIRED: 4,500/0.60 = 7,500 SF
LINEAR FEET TRENCH REQUIRED: 7,500/2 = 3,750 LF
FOUR FIELDS WITH 938 LF OF TRENCH EACH = 3,750 LF TOTAL
USE 10 TRENCHES AT 95 FT. = 950 LF
SYSTEM TO BE SEQUENTIALLY DOSED:
100% LINE VOLUME: 950 LF X 0.653 = 621 GAL
75% = 0.75x 621 = 466 GAL - 85% = 0.85x 621 = 528 GAL
CUE BOX SIPHON CHAMBER SEE DETAIL, PROVIDE 15" DRAW=484 GAL/DOSE

SEPTIC DESIGN BASIS
PROPOSED EXPANSION
EX. SYSTEM 3: 20 SEWERED CAMP SITES

FLOW: (20) 75 GPD/SITE = 1,500 GPD
SEPTIC TANK REQUIRED 1.5 X 1,500 = 2,250
2,500 SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 46-60 MIN/INCH
APPLICATION RATE: 0.45 GPD/SF
AREA REQUIRED: 1,500/0.45 = 3,334 SF
LINEAR FEET TRENCH REQUIRED: 3,334/2 = 1,667 LF
USE 24 TRENCHES AT 70 FT. = 1,680 LF
2 FIELDS 840 LF EACH
SYSTEM TO BE ALTERNATELY DOSED,
DOSE VOLUME REQUIRED:
100% VOL: 840 LF X 0.653 GAL/LF = 549 GAL PER FIELD
75% = 549 GAL X 0.75 = 412 GAL - 85% = 549 GAL X 0.85 = 467 GAL
PROVIDE FLOUT DOSING TANK AS PER DETAIL 14" DRAW
SYSTEM TO BE ALTERNATELY DOSED

ABBREVIATIONS

AC	ACRE
BF	BASEMENT FLOOR
BR	BEDROOM
BLK	BLOCK
C	CABLE
CB	CATCH BASIN
CHK	CHECK
C.O.	CLEAN OUT
DEPT.	DEPARTMENT
DET.	DETAIL
DWG.	DRAWING
E	ELECTRIC
EX.	EXISTING
FF	FINISHED FLOOR ELEVATION
FM	FILED MAP
FT.	FEET
GAL.	GALLON
GF	GARAGE FLOOR
GPD	GALLONS PER DAY
GPW	GALLONS PER MINUTE
HR.	HOUR
INV.	INVERT ELEVATION
IP	IRON PIPE
L.B.	L.B.E.R.
LIC.	LICENSE
LF	LINEAR FEET
LSE	LOWEST SEWERABLE ELEVATION
MAX.	MAXIMUM
MH	MANHOLE
MIN.	MINIMUM OR MINUTE
N/E	NOW OR FORMERLY
NTS	NOT TO SCALE
PG.	PAGE
PVC	POLYVINYL CHLORIDE
PROP.	PROPOSED
REF.	REFERENCE
REV.	REVISION
SF	SQUARE FOOT
SG.	SQUARE
SAN.	SANITARY SEWER
SC	SEWER CONNECTION
STM.	STORM SEWER
STD.	STANDARD
TYP.	TYPICAL
UP	UTILITY POLE
V	VALVE
W	WATER
WTH	WITH
W/O	WITHOUT

LEGEND

---	PROPERTY LINE
---	EASEMENT
10	CAMP SITE NUMBER
---	EXISTING TREE LINE
---	EXISTING CONTOUR
---	EXISTING FENCE LINE
---	EXISTING STREAM
---	PAVED ROAD
---	UNPAVED TRAIL
---	DEEP TESTS
---	PERCOLATION TESTS

CONSTRUCTION NOTES

1. SANITARY SEWER LATERALS AT ROAD CROSSING
2. EXCAVATE AND PLACE SANITARY LATERAL PIPE WITH MIN 2' COVER
3. REPLACE TOP COURSE ASPHALT TO MATCH AND MEET EXISTING ROAD

100' 0 100' 200'
SCALE: 1" = 100'

DRAWN BY: P. HUTTON
DEPT. CK. M. SANDOR
DEP. APPR.
COORD. CK.
P.M. APPR.
CLIENT APPR.

MJS ENGINEERING &
LAND SURVEYING, PC
261 Greenwich Ave
Goshen, NY 10924
845-291-8650
Fax 845-291-8657

SHEET TITLE:

OVERALL PLAN

JOB NAME:

**BLACK BEAR
CAMPGROUND**

TOWN OF WARWICK, ORANGE COUNTY, NEW YORK

DATE: 2/4/2014

JOB NO.
070138.01

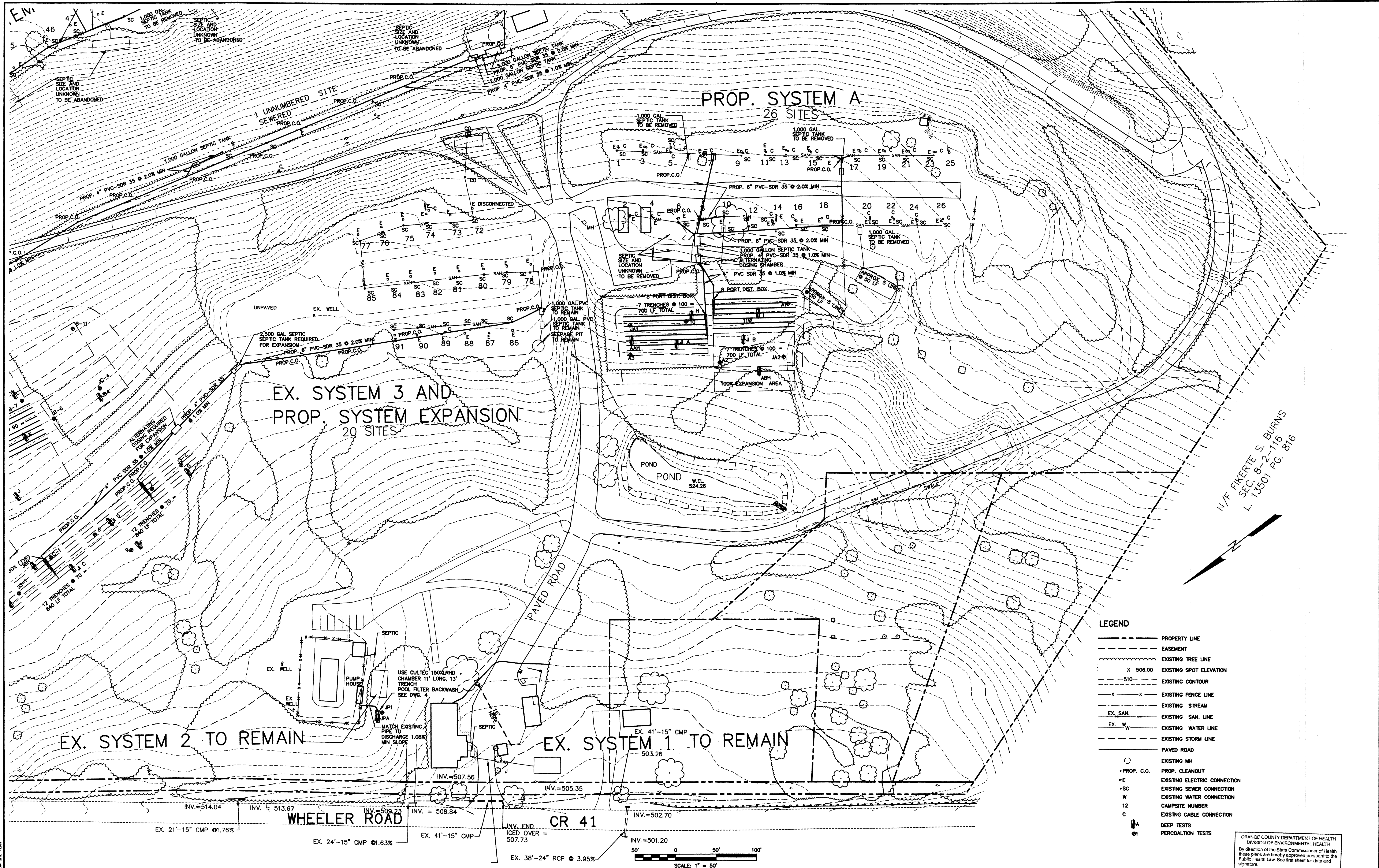
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1"=100'

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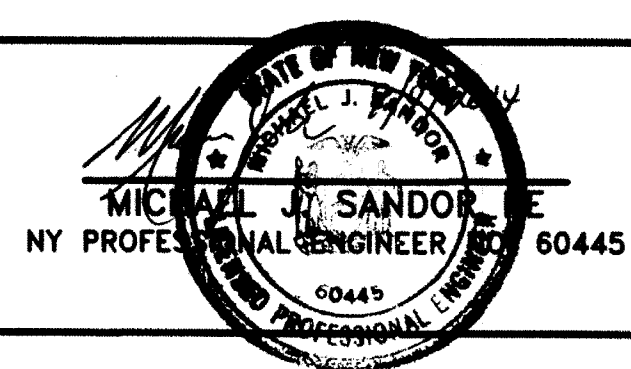
DWG. NO.

C-1

SHEET 1 OF 8



E	9/2/2014	REVISED COUNTY COMMENTS	PAH	M.S.
D	8/13/2014	REVISED COUNTY COMMENTS AND SOIL TESTS	PAH	M.S.
C	3/28/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
B	2/28/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
A	2/4/2014	SUBMITTED TO OCHD FOR REVIEW	PAH	M.S.
NO.	DATE	REVISION	BY	CK.



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CLIENT APPR.

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261 Greenwich Ave
Goshen, NY 10924
845-291-8650
Fax 845-291-8657

SHEET TITLE:

SOUTHWEST PLAN

JOB NAME:

BLACK BEAR CAMPGROUND

TOWN OF WARWICK, ORANGE COUNTY, NEW YORK

DATE: 2/4/2014

JOB NO.

070138.01

SCALE:

1"=50'

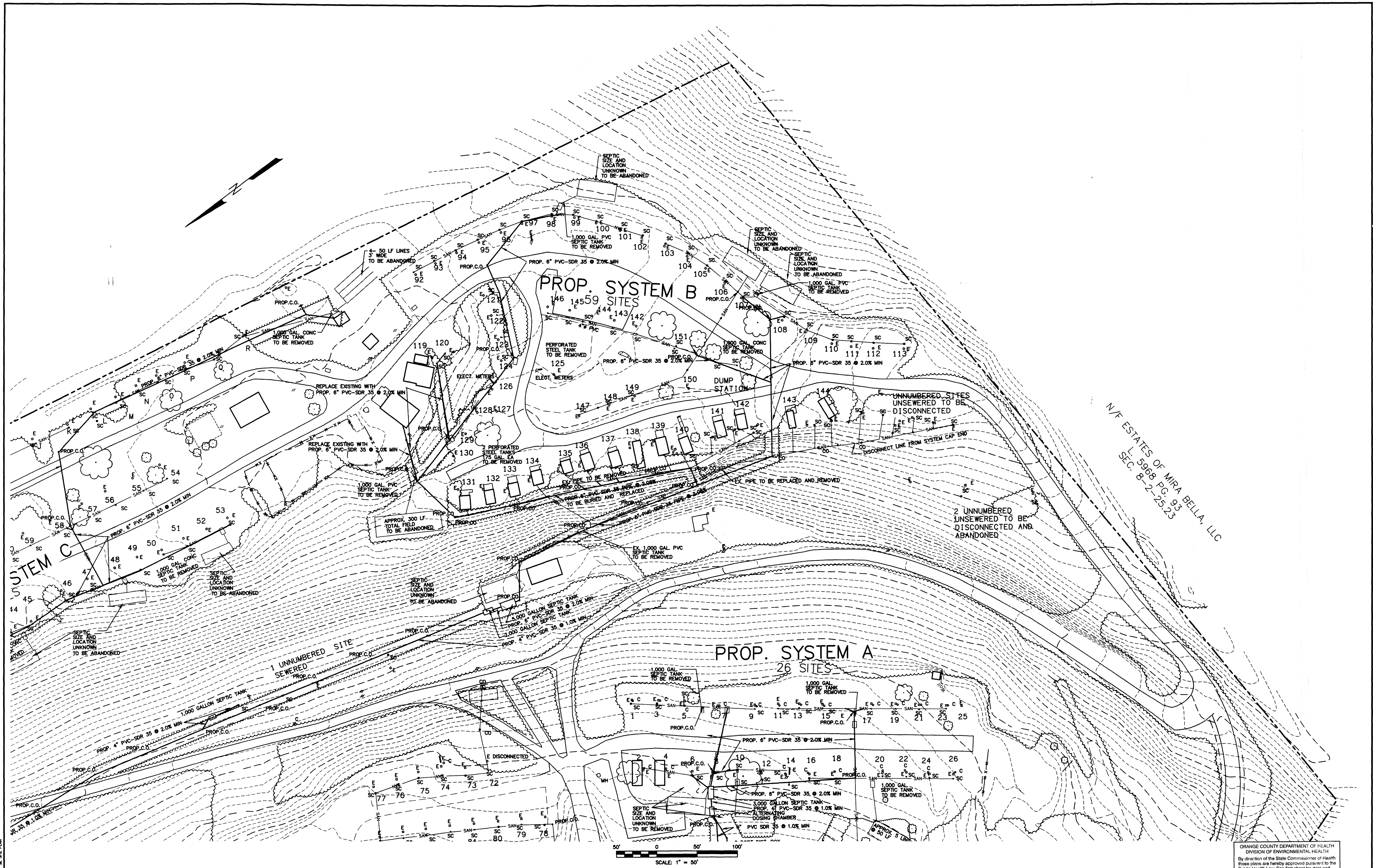
REV. NO. E

DWG. NO.

C-2

SHEET 2 OF 8

ORANGE COUNTY DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
By direction of the State Commissioner of Health
these plans are hereby approved pursuant to the
Public Health Law. See first sheet for date and
signature.



N/F ESTATES OF MIRA BELLA, LLC
 L 5968 PG. 93
 SEC. 8-2-25.23

E	9/2/2014	REVISED COUNTY COMMENTS	PAH	M.S.
D	8/13/2014	REVISED COUNTY COMMENTS AND SOIL TESTS	PAH	M.S.
C	3/28/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
B	2/28/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
A	2/4/2014	SUBMITTED TO OCHD FOR REVIEW	PAH	M.S.
NO.	DATE	REVISION	BY	CK.

MJS ENGINEERING & LAND SURVEYING, PC
 281 Greenwich Ave
 Goshen, NY 10924
 845-291-8650
 Fax 845-291-8657

SOUTHEAST PLAN

BLACK BEAR CAMPGROUND
 TOWN OF WARWICK, ORANGE COUNTY, NEW YORK

DATE: 2/4/2014	REV. NO. E
JOB NO. 070138.01	DWG. NO. C-3
SCALE: 1"=50'	SHEET 3 OF 8

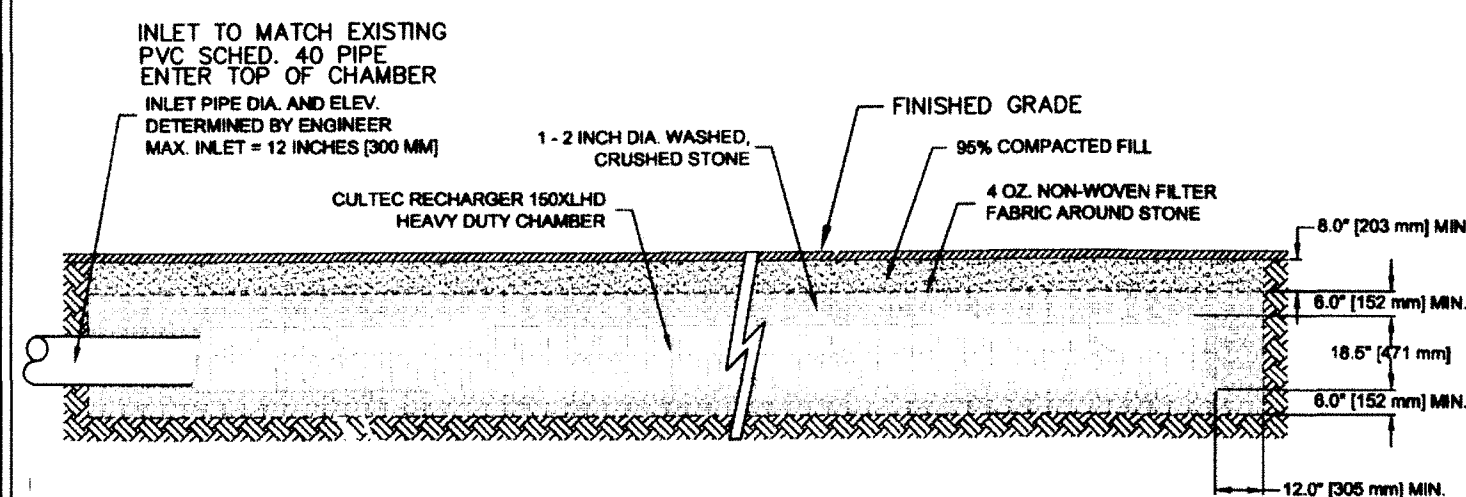


CULTEC, Inc.

Subsurface Stormwater Management Systems

P.O. Box 280
878 Federal Road
Brookfield, CT 06804
www.cultec.com

PH: (203) 775-4416
PH: (800) 4-CULTEC
FX: (203) 775-1452
tech@cultec.com



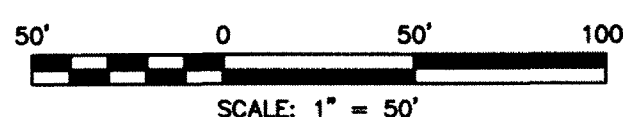
POOL FILTER BACKWASH:
PROPOSED DAILY DISCHARGE WHEN POOL IS OPERATING 201 GAL/DAY OR 27 CF/DAY
PROVIDED STORAGE OF 27CF PROVIDED WITH DEPTH OF 15" IN CHAMBER INCLUDING STONE
STORAGE
TOTAL CAPACITY TO TOP OF CHAMBER INCLUDING STONE STORAGE IS 325 GAL OR 43.5CF

CULTEC MANIFOLD DETAIL

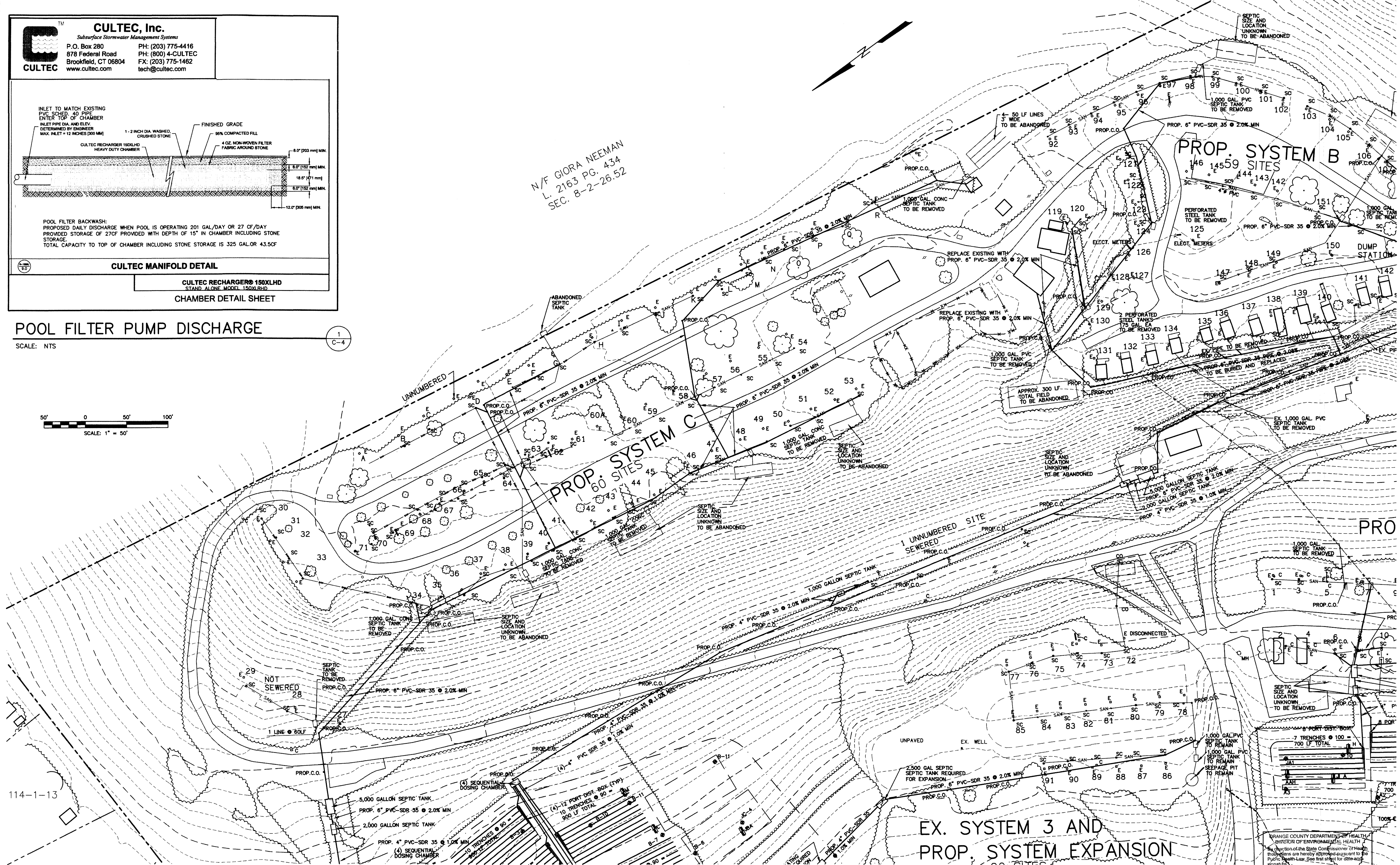
CULTEC RECHARGER® 150XLHD
STAND-ALONE MODEL 150XLHD
CHAMBER DETAIL SHEET

POOL FILTER PUMP DISCHARGE

SCALE: NTS

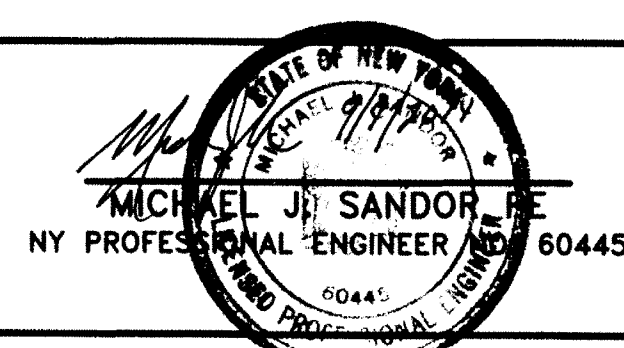


N/F GIORA NEEMAN
L. 2163 PG. 434
SEC. 8-2-26.52



P:\070138\070138.dwg 08/13/2014 10:00 AM

E	9/2/2014	REVISED COUNTY COMMENTS	PAH	M.S.
D	8/13/2014	REVISED COUNTY COMMENTS AND SOIL TESTS	PAH	M.S.
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NO.	DATE	REVISION	BY	CK.



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DEPT. CK. M. SANDOR
DEP. APPR.
COORD. CK.
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CLIENT APPR.

MJS ENGINEERING &
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261 Greenwich Ave
Goshen, NY 10924
845-291-8650
Fax 845-291-8657

SHEET TITLE:

**NORTHEAST
PLAN**

JOB NAME:

**BLACK BEAR
CAMPGROUND**

TOWN OF WARWICK, ORANGE COUNTY, NEW YORK

DATE: 2/4/2014

JOB NO.

070138.01

SCALE:

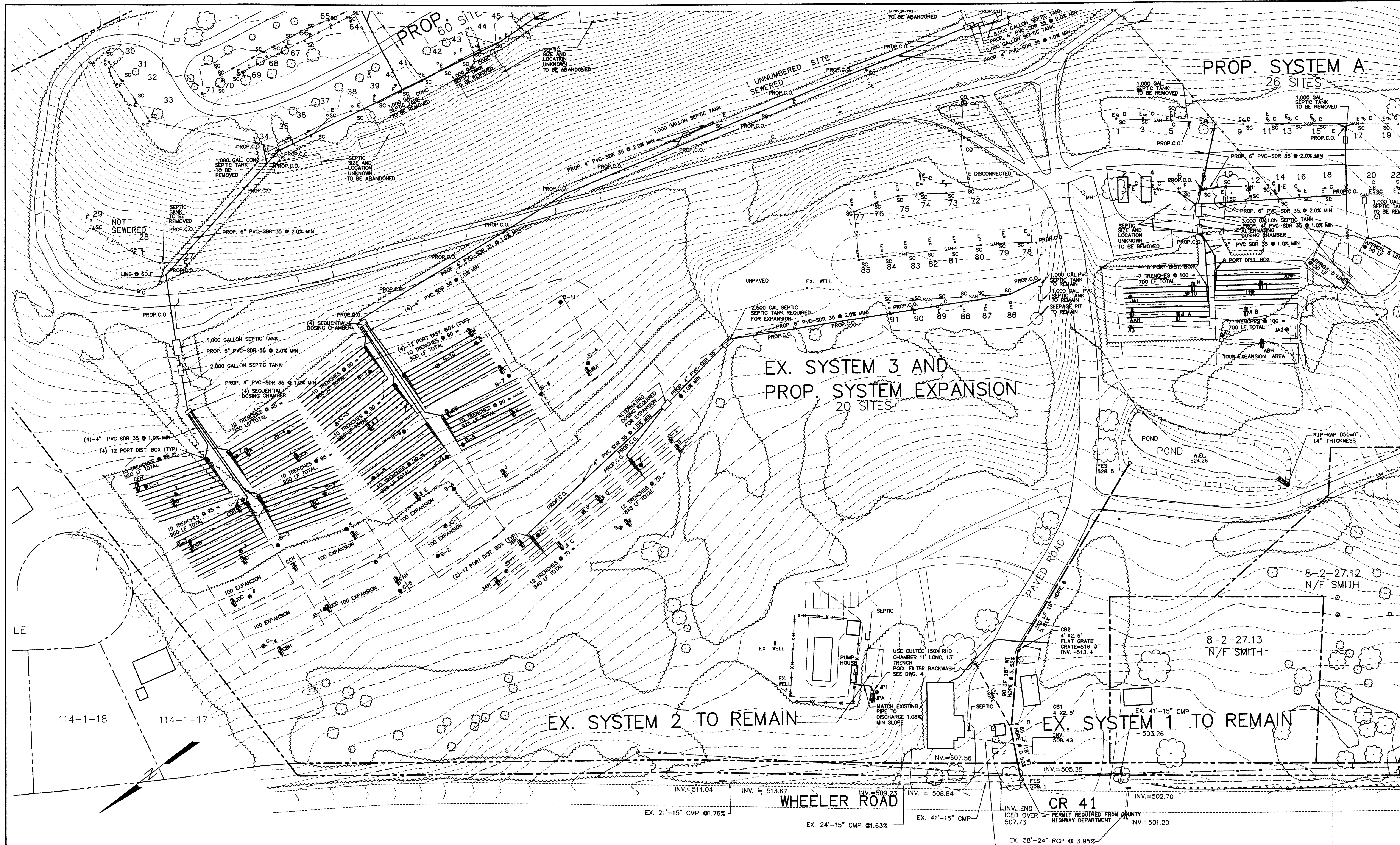
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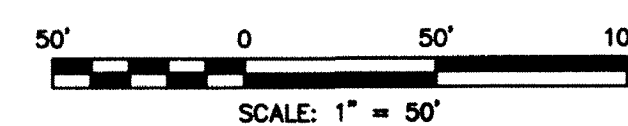
DWG. NO.

C-4

SHEET 4 OF 8

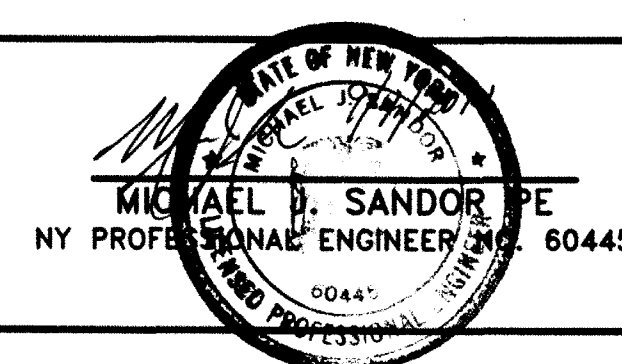


WORK SHEET



SOIL TESTS WORK SHEET

NO.	DATE	REVISION	BY	CK.
E	9/2/2014	REVISED COUNTY COMMENTS	PAH	M.S.
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Goshen, NY 10924
845-291-8650
Fax 845-291-8657

SHEET TITLE:

**NORTHWEST
PLAN**

JOB NAME:

**BLACK BEAR
CAMPGROUND**

TOWN OF WARWICK, ORANGE COUNTY, NEW YORK

ORANGE COUNTY DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
By direction of the State Commissioner of Health
these plans are hereby approved pursuant to the
Public Health Law. See first sheet for date and
signature.

DATE: 2/4/2014

JOB NO.

070138.01

SCALE:

1"=50'

REV. NO. E

DWG. NO.

C-5

SHEET 5 OF 8

SEEDING:

1. GROUND PREPARATION:

AREAS TO BE SEED WITH TURF SEEDS SHALL BE MAINTAINED AT APPROVED GRADES AND IRREGULARITIES THAT WILL HOLD WATER SHALL BE ELIMINATED. LIMESTONE, FERTILIZER AND SEEDS IN THE AMOUNTS SPECIFIED SHALL BE EVENLY DISTRIBUTED ON THE AREAS TO BE SEED.

THE FINISHED SURFACE OF ANY AREA THAT IS SEED SHALL NOT BE ROUGHER, MORE UNEVEN, OR HAVE MORE OR LARGER STONES, CLODS, ROOTS, OR OTHER FOREIGN MATERIALS THAN THE AREA IT ADJOINS. IN BUILD-UP AND RESIDENTIAL AREAS, HAND RAKING WILL USUALLY BE NECESSARY TO PRODUCE THE REQUIRED SMOOTHNESS AND UNIFORMITY, PARTICULARLY WHERE GRADING AND TURF ESTABLISHMENT IS TO BE ADJACENT TO LAWNS.

AREAS TO BE SEED SHALL BE SCARIFIED SUFFICIENTLY TO BREAK UP THE SURFACE CRUST IMMEDIATELY BEFORE SEEDING EXCEPT WHERE THE GROUND IS ALREADY LOOSE AND FRIABLE AS IMMEDIATELY FOLLOWING GRADING. ALL STONES AND OTHER OBJECTS OVER TWO INCHES IN GREATEST DIMENSION, OR OTHER SIZES AS SPECIFIED, SHALL BE REMOVED AND DISPOSED OF AS APPROVED. ONLY LIMESTONE AND/OR FERTILIZERS MAY BE MIXED TOGETHER WITH THE SEEDS (INCLUDING LEGUME INOCULANTS WHEN REQUIRED) IMMEDIATELY BEFORE SOWING. ANY METHOD OF SOWING THAT DOES NOT INJURE THE SEEDS IN THE PROCESS OF SPREADING WILL BE ACCEPTABLE.

2. RATES:

APPLICATION RATES FOR TURF ESTABLISHMENT MATERIALS SHALL BE:

FERTILIZER - 85 POUNDS PURE LIVE SEED PER ACRE
MULCH - 2 TONS PER ACRE
MULCH ANCHORAGE - MANUFACTURER'S RECOMMENDED RATE

3. SEED:

PERMANENT WT. OF PURE LIVE SEED NAME	VARIETY	LBS. PER ACRE
RED FESCUE (FESTUCA RUBRA)	COMMERCIAL	50
PERENNIAL RYEGRASS (LOLIUM PERENNE)	COMMERCIAL	30
WHITE CLOVER (TRIFOLIUM REPENS)	COMMERCIAL	5
MAX 25% HARD SEED		5
TOTAL		85 LBS.

SOIL EROSION AND SEDIMENT CONTROL NOTES:

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, AND SHALL BE IN PLACE PRIOR TO ANY SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH SALT HAY OR THE EQUIVALENT AND BOUND.
- PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER THE FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 2 TONS PER ACRE.
- PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT VEGETATIVE COVER.
- ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.
- PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
- STRAW BALE DIKE MAY BE USED AS AN ALTERNATIVE TO SILT FENCE.
- SOIL STOCKPILES SHALL BE LOCATED BY CONTRACTOR AS REQUIRED.

CONSTRUCTION SEQUENCE:

- INSTALL SYSTEM A TEMPORARY CONSTRUCTION ENTRANCE.
- INSTALL SILT FENCE AS SHOWN. CLEAR AND GRUB SITE.
- STRIP AND STOCKPILE TOPSOIL.
- CONSTRUCT SEPTIC FIELDS. INSTALL SEWER PIPE AND CONNECT TO EXISTING SEWER PIPES.
- PUMP OUT, THEN REMOVE EXISTING SEPTIC TANKS.
- PLACE 4 INCH TOPSOIL OVER ENTIRE DISTURBED AREA AND ESTABLISH LAWN.
- PROCEED TO SYSTEM B.
- INSTALL TEMPORARY CONSTRUCTION ENTRANCE, THEN SAME SEQUENCE.
- PROCEED TO SYSTEM C, SAME SEQUENCE.
- UPON DETERMINATION OF SATISFACTORY SOIL STABILIZATION BY TOWN REPRESENTATIVE, REMOVE SEDIMENT CONTROL DEVICES.

TEMPORARY SEED

	TOTAL	85 LBS.
	LBS. /ACRE	LBS. /1,000 SQ. FT.
FOR SPRING SEEDING:		
A) ANNUAL RYEGRASS	30	0.70
B) SPRING OATS	80 (2 1/2 BU)	2.00
C) ANNUAL RYEGRASS	15	0.35
D) SPRING OATS	84 (2 BU)	1.50
E) PERENNIAL RYEGRASS	30	0.70
FOR LATE SPRING & SUMMER SEEDING:		
A) SUDANGRASS	40 (1.0 BU)	0.90
B) ANNUAL RYEGRASS	30	0.70
C) PERENNIAL RYEGRASS	30	0.70
FOR LATE SUMMER & FALL SEEDING:		
A) ANNUAL RYEGRASS (COMMON)	30	0.70
B) WINTER RYE (ARROSTOCK)	112 (2 BU)	2.50
C) WINTER WHEAT	120 (2 BU)	2.75
D) PERENNIAL RYEGRASS (PENNFINE)	30	0.70

TEMPORARY SEEDING:

MULCHING AS REQUIRED ON SITES DIFFICULT TO VEGETATE (SANDS, SLOPES, OR HYDROSEEDINGS AND OFF-SEASON OPERATIONS).

- MULCH MATERIALS SHALL BE UNROTTED SALT HAY, HAY OR SMALL GRAIN STRAW AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1000 SQUARE FOOT. MULCH BLOWERS SHOULD NOT GRIND OR CHOP TILE MATERIAL.
- SPREAD UNIFORMITY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
- MULCH ANCHORING SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING ON THE SIZE OF THE AREA, AND STEEPNESS OF SLOPES:
 - PEG AND TWINE: DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
 - MULCH NETTING: STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTING TO THE TOP SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
 - MULCH ANCHORING TOOL: (A TRACTOR DRAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE.) TOOL PENETRATION SHOULD BE ABOUT 3 TO 4 INCHES. ON SLOPING LAND, THE OPERATION SHALL BE DONE ON THE CONTOUR.

STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA SEEDINGS:

- SITE PREPARATION WILL INCLUDE:
 - SEEDBED PREPARATION - SCARIFY IF COMPACTED. REMOVE DEBRIS AND OBSTACLES SUCH AS ROCKS AND STUMPS.
 - SOIL AMENDMENTS:
 - LIME TO pH OF 6.0.
 - FERTILIZE WITH 600 LBS. OF 5-10-10 OR EQUIVALENT PER ACRE (14 LBS. /1,000 SQ. FT.).
 - SEED MIXTURES:
- TEMPORARY SEEDINGS:
 - RYEGRASS (ANNUAL OR PERENNIAL) @ 30 LBS PER ACRE (0.7 LBS. /1,000 SQ. FT.)
 - CERTIFIED "ARROSTOCK" WINTER RYE (CEREAL RYE) @ 100 LBS. PER ACRE (2.5 LBS. /1,000 SQ. FT.). USE WINTER RYE IF SEEDING IN OCTOBER/NOVEMBER.
- PERMANENT SEEDINGS:

GENERAL RECREATION AREAS AND LAWNS (MEDIUM TO HIGH MAINTENANCE)
65% KENTUCKY BLUEGRASS BLEND
23% PERENNIAL RYEGRASS
15% FINE FESCUE

 - TIME OF SEEDING:

PERMANENT SEEDINGS MAY BE MADE ANY TIME OF YEAR IF PROPERLY MULCHED AND ADEQUATE MOISTURE IS PROVIDED. MID-SUMMER IS NOT A GOOD TIME TO SEED, BUT THESE SEEDINGS, IF CONSTRUCTION IS COMPLETE, WILL FACILITATE COVERING THE LAND. PORTIONS MAY FAIL AND MAY NEED RESEEDING THE FOLLOWING YEAR.

TEMPORARY SEEDINGS SHOULD BE MADE WITHIN 24 HOURS OF CONSTRUCTION OR DISTURBANCE. IF NOT, THE SOIL MUST BE SCARIFIED PRIOR TO SEEDING.
 - METHOD OF SEEDING:

BROADCASTING, DRILLING WITH CULTIPACK TYPE SEEDER OR HYDROSEEDING ARE ACCEPTABLE. GOOD SOIL TO SEED CONTACT IS THE KEY TO SUCCESSFUL SEEDINGS.
 - MULCHING AND MULCH ANCHORING:

MULCHING IS ESSENTIAL TO OBTAIN A UNIFORM STAND OF PLANTS. SEE STANDARD AND SPECIFICATIONS FOR MULCHING ON PAGE 3.31.
 - IRRIGATION:

WATERING MAY BE ESSENTIAL TO ESTABLISH A NEW SEEDING. WEATHER CONDITIONS AND THE INTENDED USE OF THE AREA WILL DICTATE WHEN TO WATER. IRRIGATION IS SPECIALIZED PRACTICE AND CARE NEEDS TO BE TAKEN NOT TO EXCEED THE APPLICATION RATE/INFILTRATION RATE OF ANY GIVEN SOIL. EACH APPLICATION MUST BE UNIFORMLY APPLIED AND 1 TO 2 INCHES OF WATER SHOULD BE APPLIED PER APPLICATION SET UP.
- ESTABLISHING TREES, SHRUBS, AND VINES
 - PLANT MATERIALS:

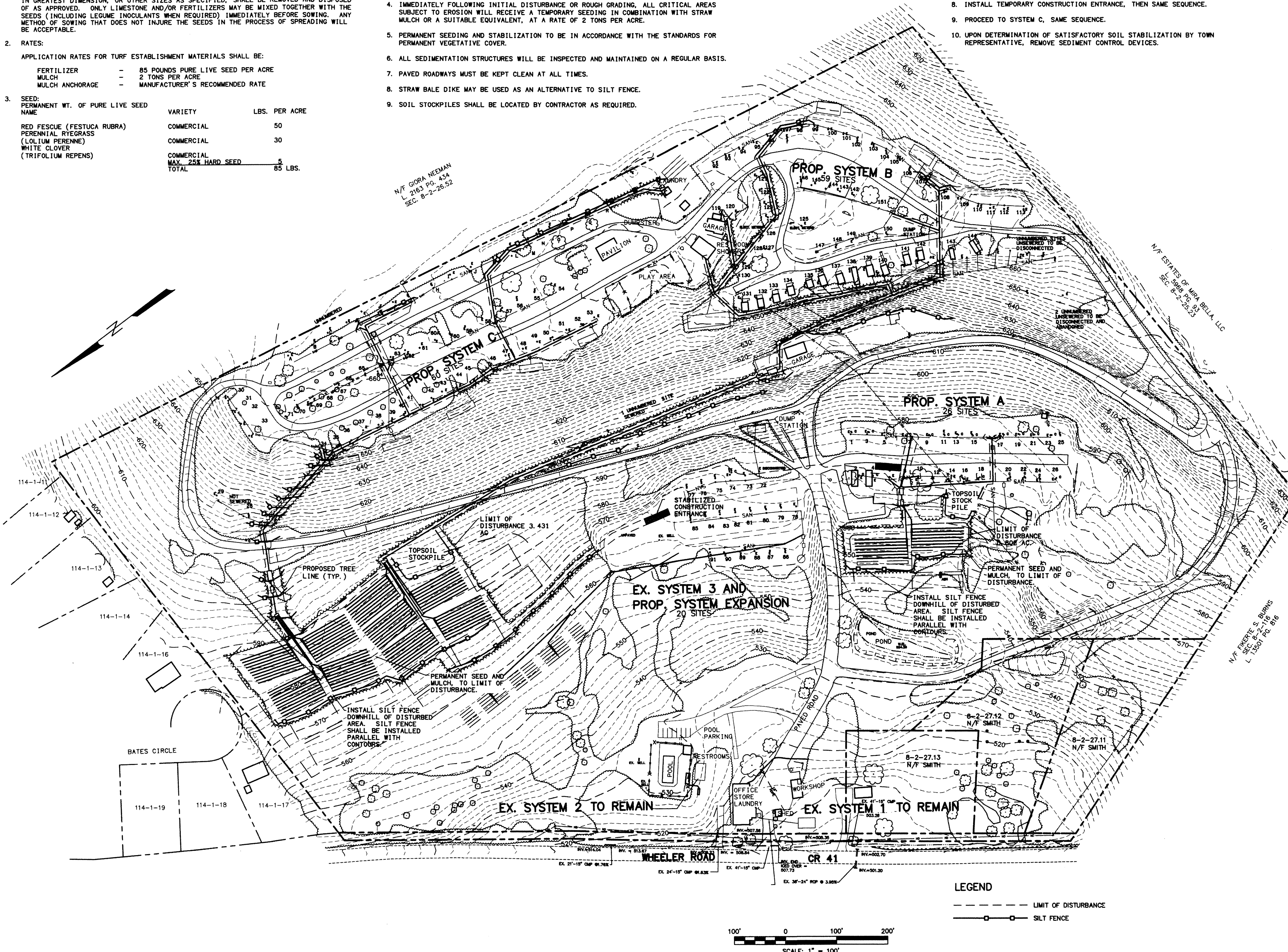
PLANTS SHALL CONFORM TO THE SPECIES, VARIETY, SIZE, NUMBER AND CONDITIONS AS STATED ON THE PLAN DRAWINGS.
 - PLANTING TIME:

DECIDUOUS TREES AND SHRUBS: APRIL 1 TO JUNE 1 AND OCTOBER 15 TO DECEMBER 15.
EVERGREEN TREES AND SHRUBS: APRIL 1 TO JUNE 1 AND SEPTEMBER 1 TO NOVEMBER 15.
 - PLANTING:
 - PLANTS SHALL BE LOCATED AS SHOWN ON THE PLAN.
 - ALL PLANTS SHALL BE THOROUGHLY WATERED ON THE SAME DAY OF PLANTING. PLANTS THAT HAVE SETTLED SHALL BE RESET TO GRADE.
 - WRAPPING:

IMMEDIATELY AFTER PLANTING, WRAP DECIDUOUS TREE TRUNKS FROM THE BOTTOM TO THE FIRST LIMB WITH A 4 INCH WIDE BITUMINOUS IMPREGATED, INSECT-RESISTANT TAPE OR PAPER MANUFACTURED FOR THAT PURPOSE. TIE WITH JUTE (BAG STRINGS) AT TOP AND BOTTOM.
 - MULCHING:

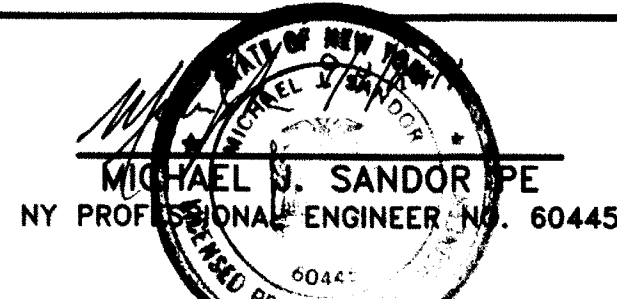
MULCH THE DISTURBED AREA AROUND INDIVIDUAL TREES AND SHRUBS WITH A 4 INCH LAYER OF WOOD CHIPS. EXTEND A 2 INCH THICK LAYER OR MULCH OVER THE SAUCER. MULCH PLANTING BEDS WITH 2 INCHES OF WOOD CHIPS.
 - PRUNING:

AFTER PLANTING, PRUNE TO REMOVE INJURED TWIGS AND BRANCHES. NATURAL HABIT OR SHAPE OF THE PLANT SHOULD NOT BE CHANGED.



P:\070138\070138.dwg EROSION AND SED

E	9/2/2014	REVISED COUNTY COMMENTS	PAH	M.S.
D	8/13/2014	REVISED COUNTY COMMENTS AND SOIL TESTS	PAH	M.S.
C	3/28/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
B	2/28/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
A	2/4/2014	SUBMITTED TO OCHD FOR REVIEW	PAH	M.S.
NO.	DATE	REVISION	BY	CK.

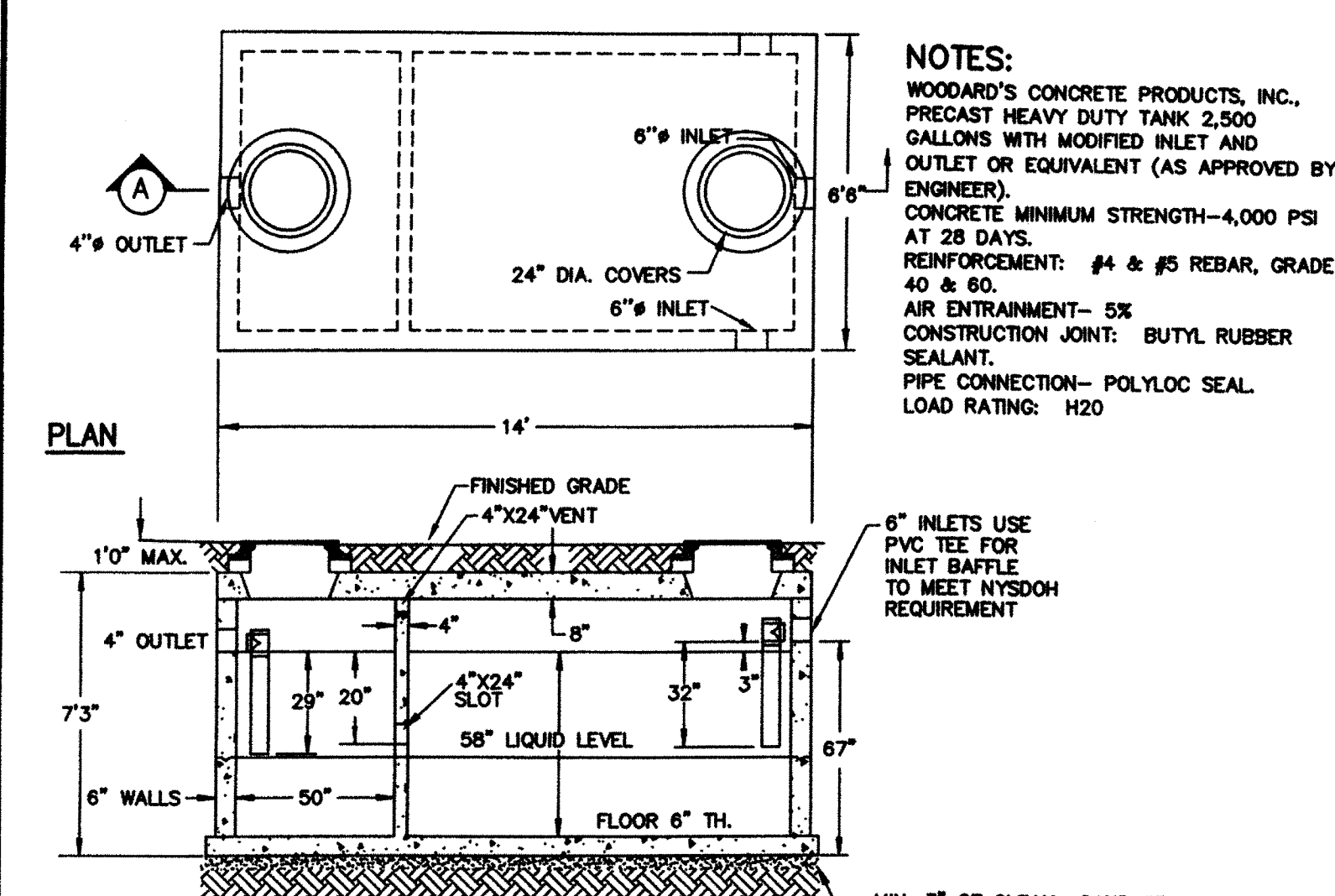


DRAWN BY: P. HUTTON
DEPT. CK. M. SANDOR
DEP. APPR.
COORD. CK.
P.M. APPR.
CLIENT APPR.

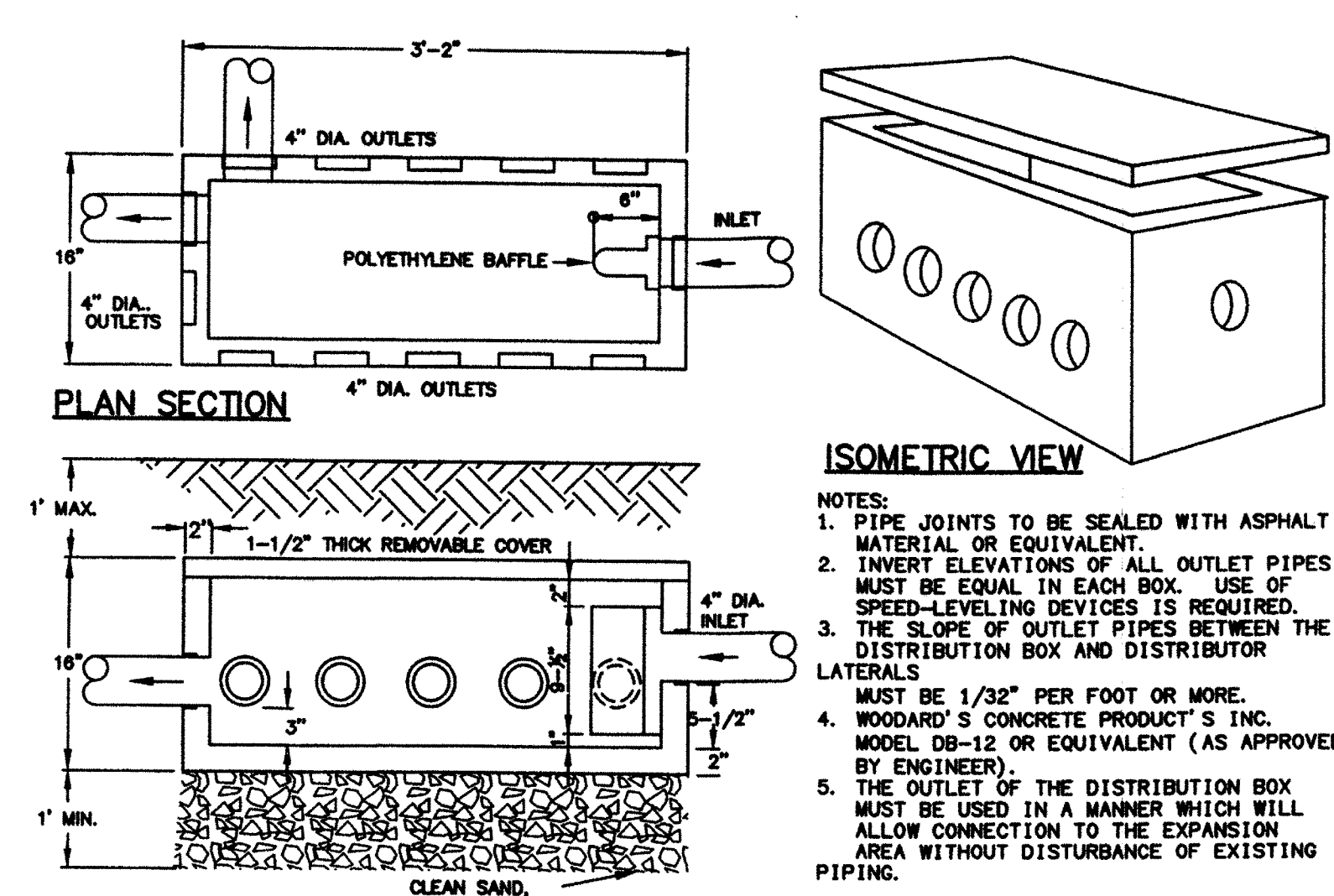
MJS ENGINEERING &
LAND SURVEYING, PC
261 Greenwich Ave
Coastal, NY 10924
845-291-8650
Fax 845-291-8657

SHEET TITLE:
**EROSION AND SEDIMENT
CONTROL PLAN**

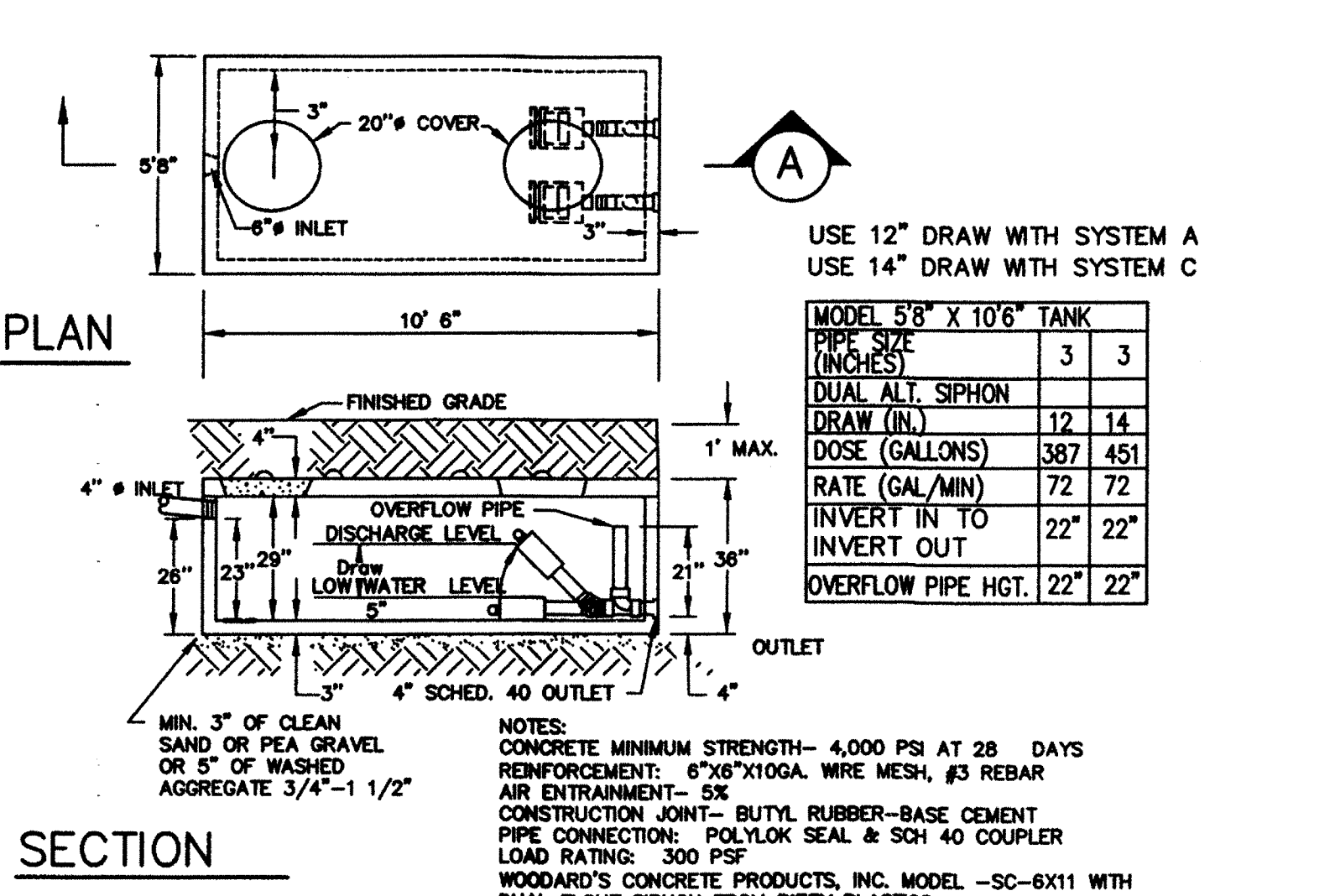
JOB NAME:	DATE: 2/4/2014	REV. NO. E
BLACK BEAR CAMPGROUND	JOB NO. 070138.01	DWG. NO. C-6
TOWN OF WARWICK, ORANGE COUNTY, NEW YORK	SCALE: 1"=100'	SHEET 6 OF 8



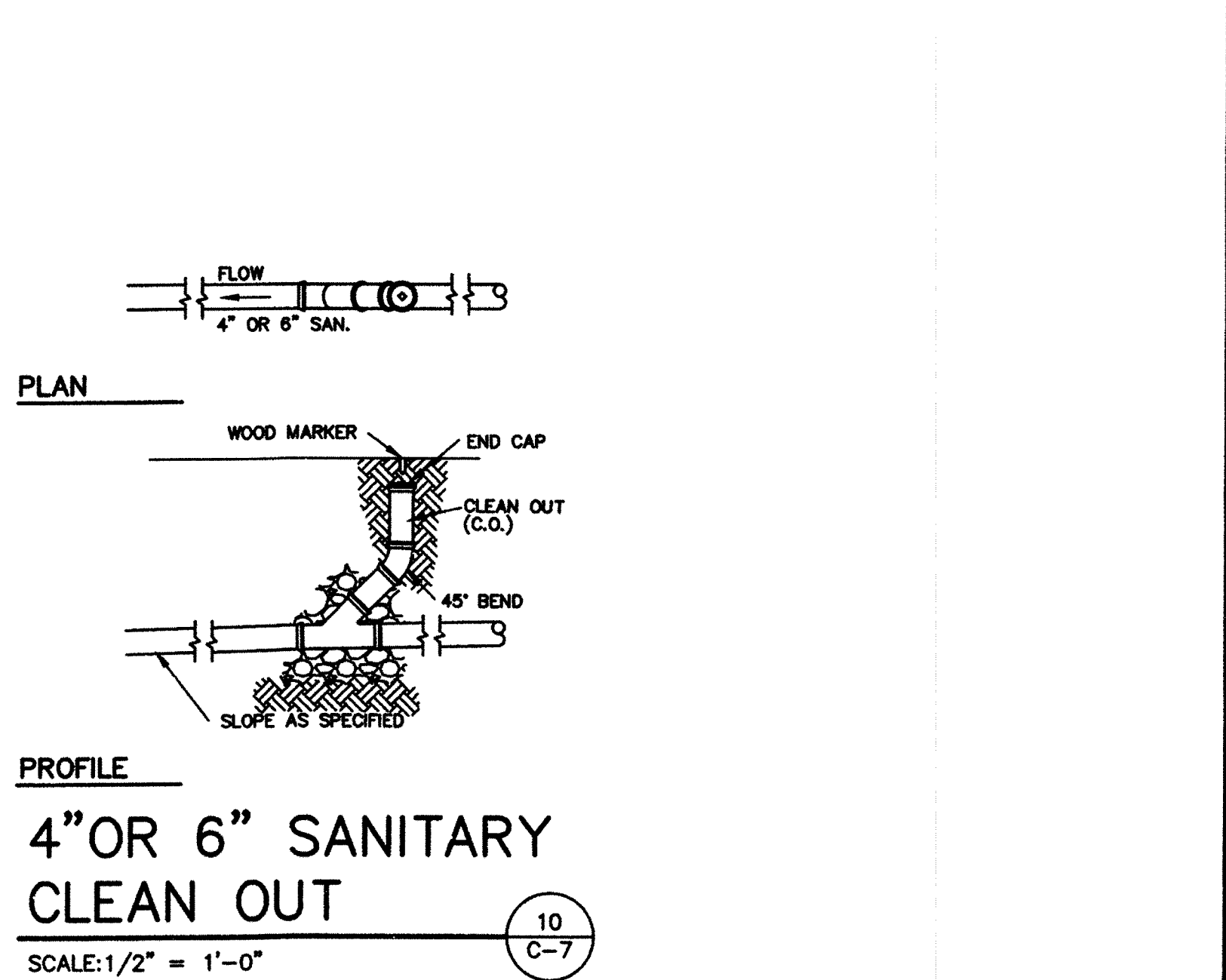
PRECAST SEPTIC TANK-2,500 GALLONS
SCALE: NTS FOR USE WITH SYSTEM 3



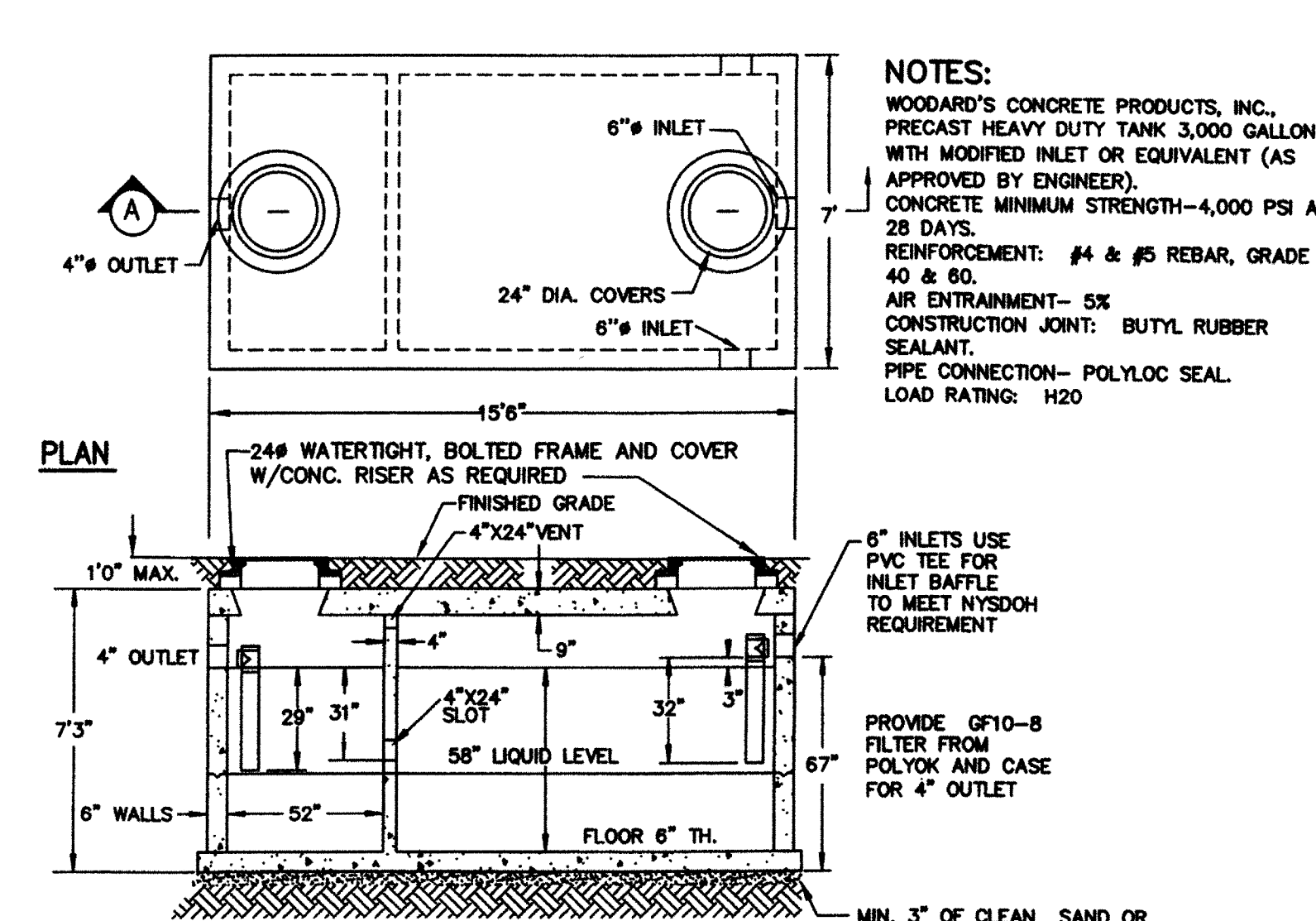
DISTRIBUTION BOX (12 PORT)
SCALE: NTS



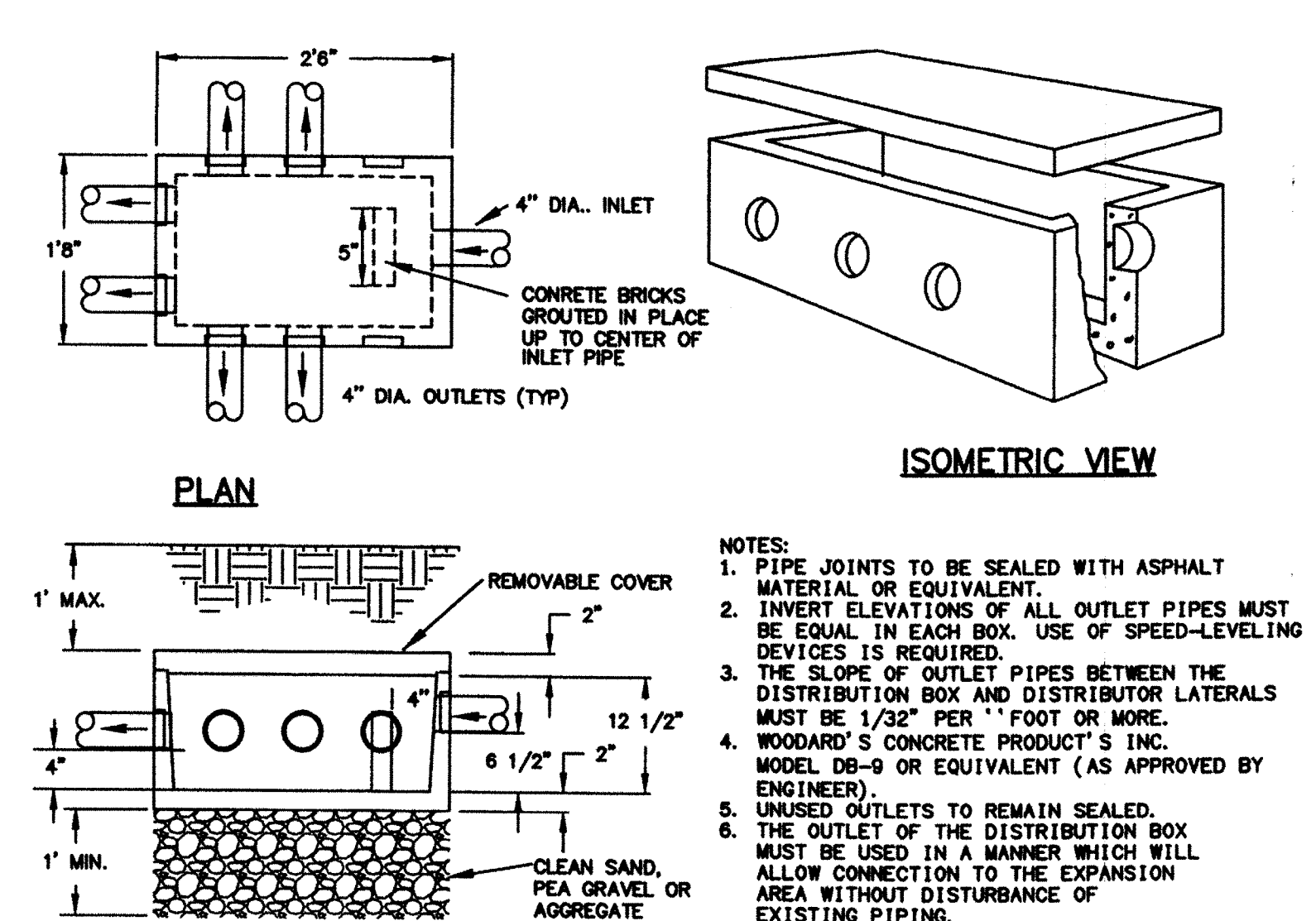
SYSTEMS A & 3 PRECAST DUAL ALT. DOSING CHAMBER
SCALE: NTS



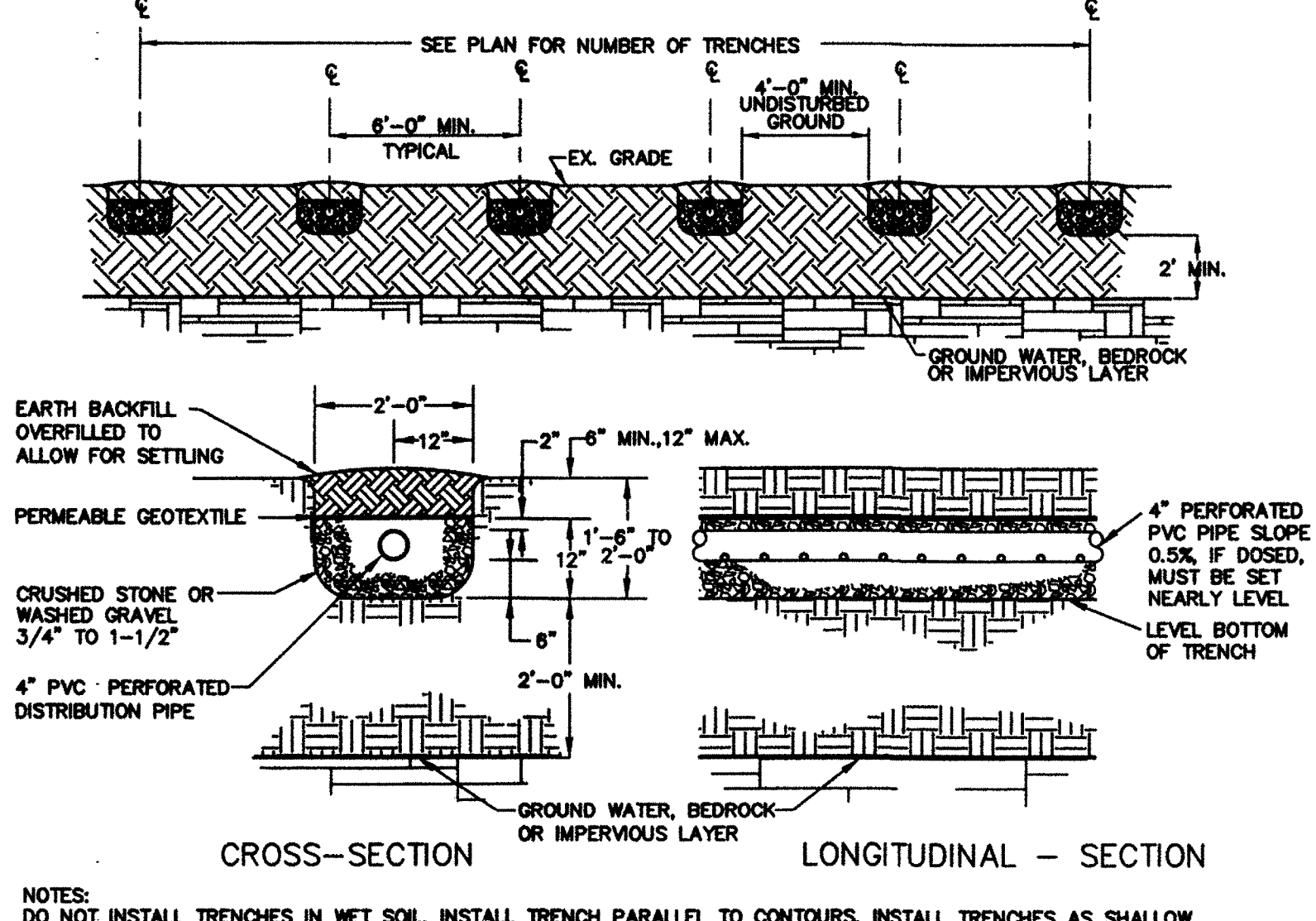
4" OR 6" SANITARY CLEAN OUT
SCALE: 1/2" = 1'-0"



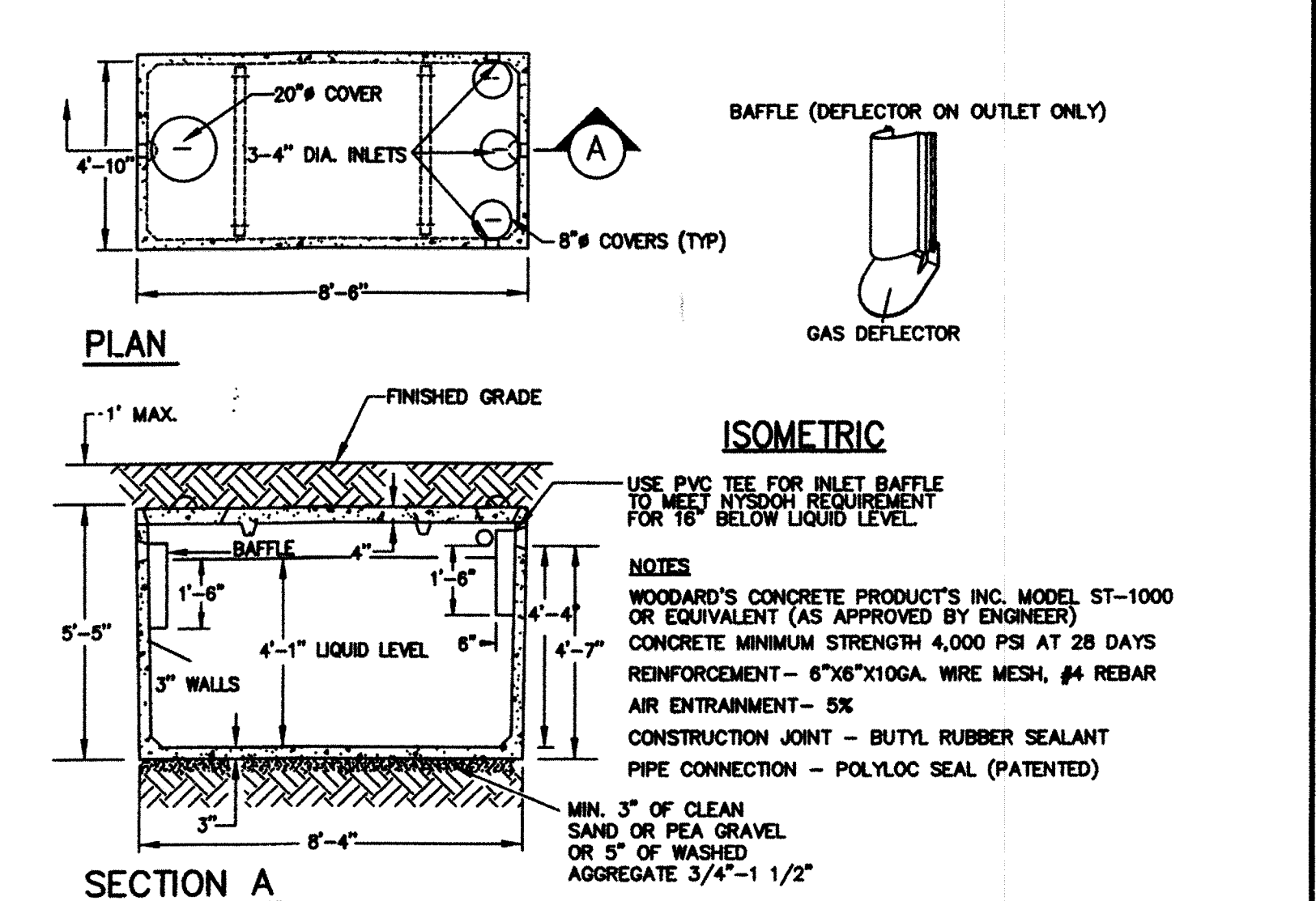
PRECAST SEPTIC TANK-3,000 GALLONS
SCALE: NTS FOR USE WITH SYSTEM A



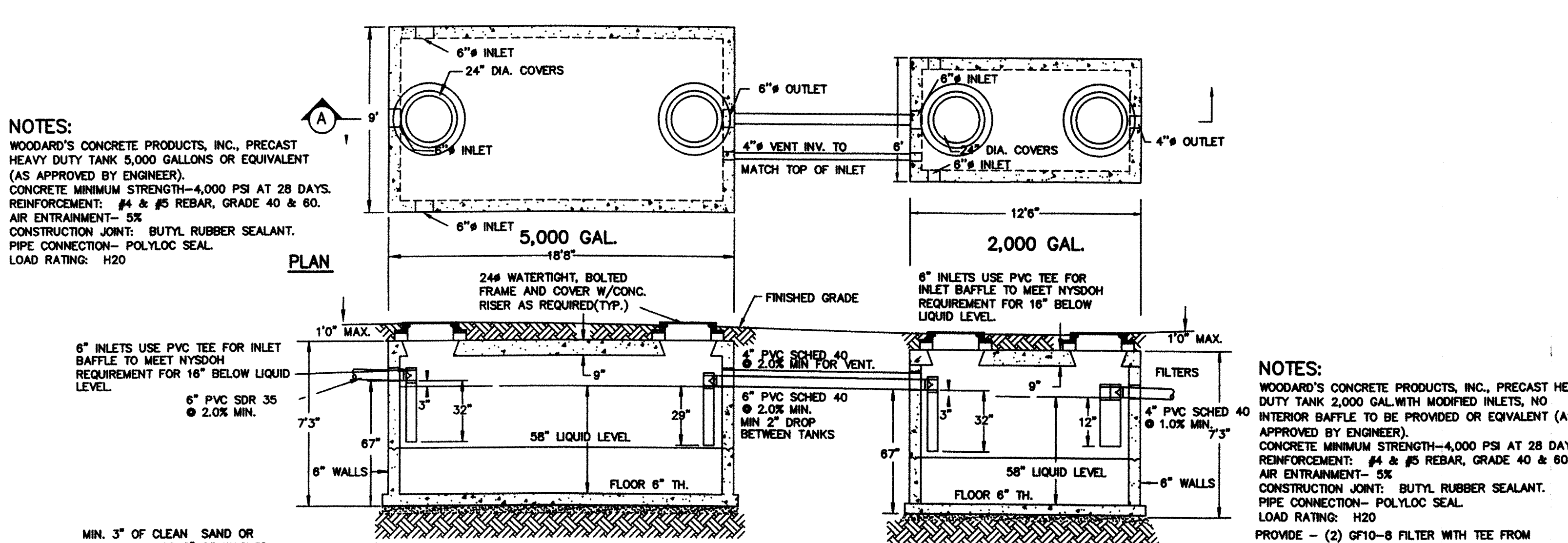
DISTRIBUTION BOX (8 OUTLETS)
SCALE: NTS



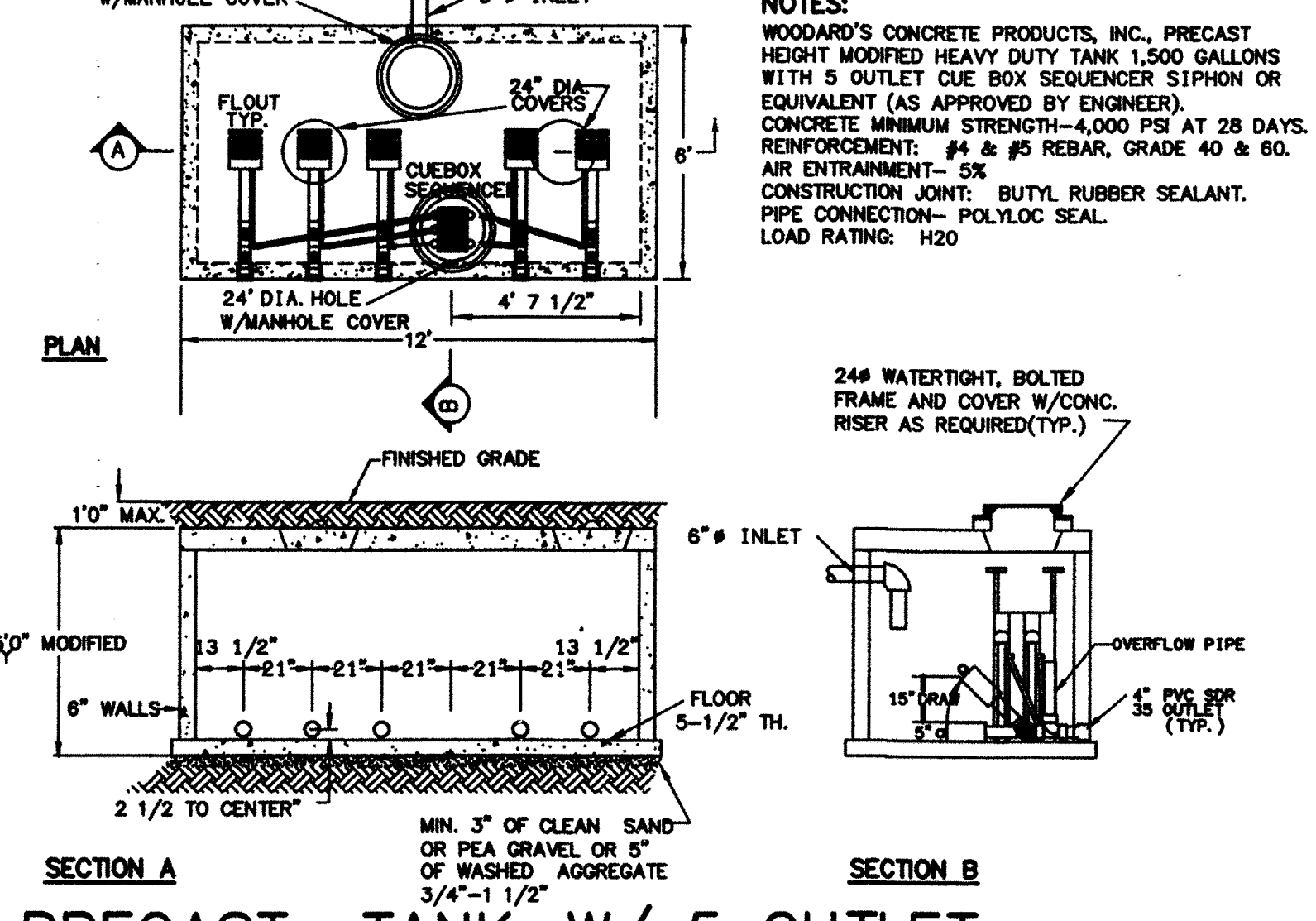
ABSORPTION TRENCH SYSTEM DETAIL
SCALE: 1/2" = 1'-0"



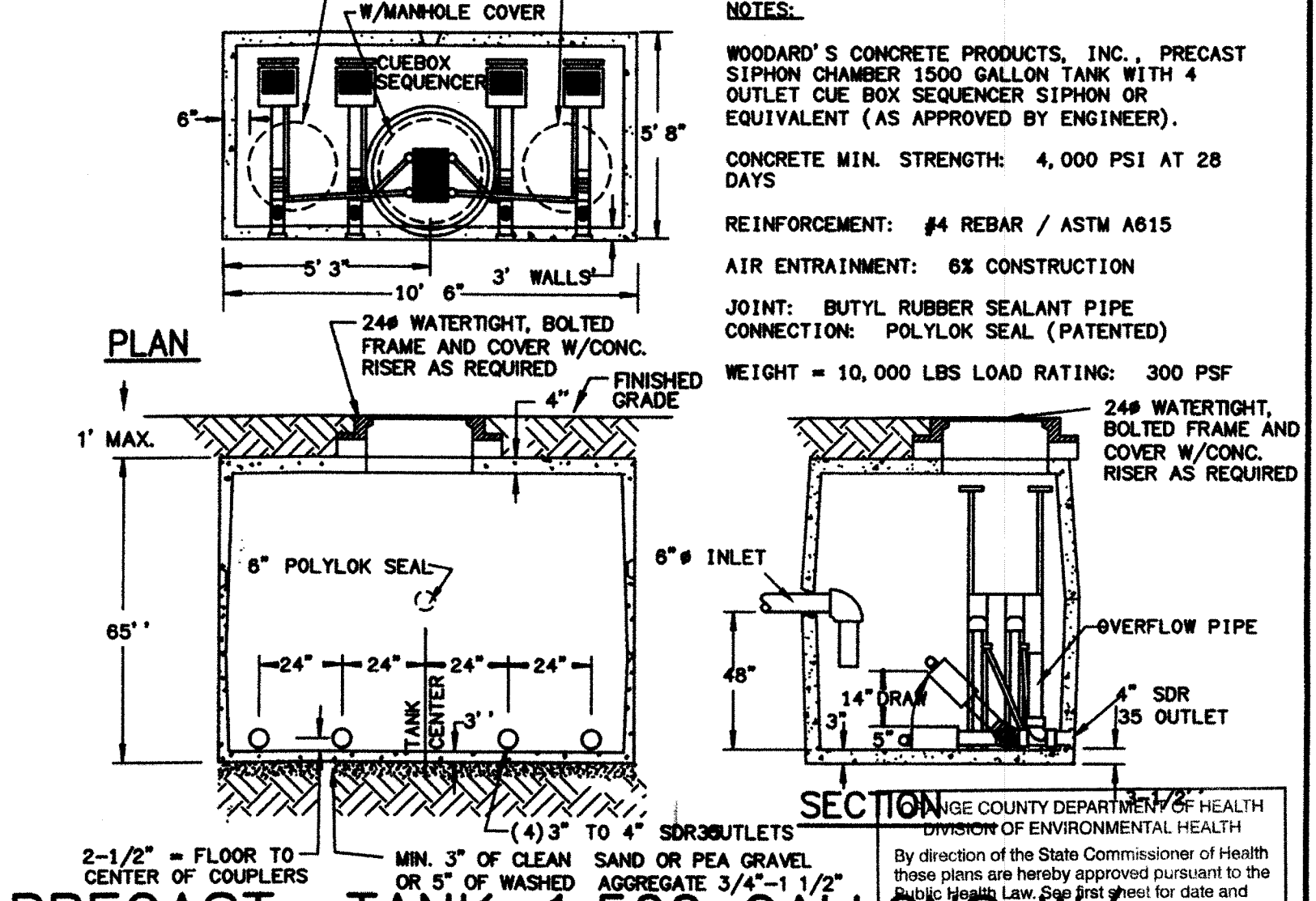
PRECAST SEPTIC TANK-1,000 GALLONS
SCALE: NTS FOR USE WITH UNNUMBERED SITE



PRECAST SEPTIC TANK-5,000 GALLONS & 2,000 GALLONS IN SERIES
SCALE: NTS FOR USE WITH SYSTEM B AND C



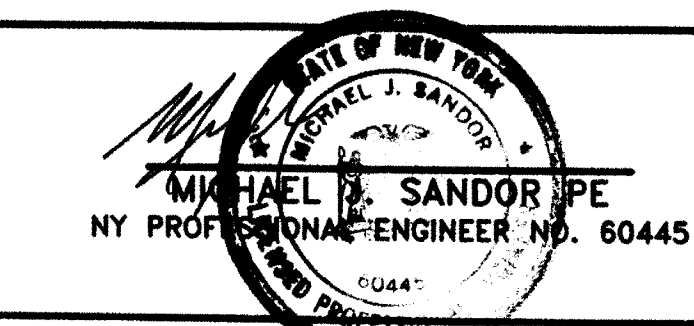
PRECAST TANK-W/ 5 OUTLET CUE BOX SEQUENCER
SCALE: NTS SYSTEM B



PRECAST TANK-1,500 GALLONS W/ 4 OUTLET CUE BOX SEQUENCER
SCALE: NTS SYSTEM C

P:\V\100\1001\1001.dwg

NO.	DATE	REVISION	BY	CK.
E	9/2/2014	REVISED COUNTY COMMENTS	PAH	M.S.
D	8/13/2014	REVISED COUNTY COMMENTS AND SOIL TESTS	PAH	M.S.
C	3/27/2014	REVISED AS PER OCHD TECHNICAL REVIEW	PAH	M.S.
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DRAWN BY: P HUTTON
DEPT. CK. M. SANDOR
DEP. APPR.
COORD. CK.
P.M. APPR.
CLIENT APPR.

MJS ENGINEERING & LAND SURVEYING, PC
261 Greenwich Ave
Goshen, NY 10924
845-291-8650
Fax 845-291-8657

SHEET TITLE:
DETAILS

JOB NAME:
BLACK BEAR CAMPGROUND
TOWN OF WARWICK, ORANGE COUNTY, NEW YORK

DATE: 2/4/2014
JOB NO. 070138.01
SCALE: AS NOTED

REV. NO. E
DWG. NO. C-7
SHEET 7 OF 8

SOIL DEEP TESTS

PATRICK HUTTON MJS 11/18/13 HOLE: A 0'-6" TOPSOIL 6'-60" LT. BROWN, GRAVELLY SILT LOAM SHALE FRAGMENTS 6" - 12"	
HOLE: B 0'-6" TOPSOIL 6'-510" LT. BROWN, GRAVELLY SILT LOAM LARGE ROCK @ 5'	
HOLE: C 0'-8" TOPSOIL 8'-60" LT. BROWN, GRAVELLY SILT LOAM	
HOLE: D 0'-6" TOPSOIL 6'-60" LT. BROWN, GRAVELLY SILT LOAM 6' LARGE ROCK	
HOLE: E 0'-8" TOPSOIL 8'-60" LT. BROWN, GRAVELLY SILT LOAM	
HOLE: F 0'-10" TOPSOIL 10'-36" LT. BROWN, SILT LOAM 36"-66" MED. BROWN, GRAVELLY SILT LOAM	
HOLE: G 0'-1" TOPSOIL 1'-16" LT. BROWN, SILT LOAM 16"-60" MED. BROWN, GRAVELLY SILT LOAM ROCKS 2' - 6'	
HOLE: H 0'-2" TOPSOIL 2'-20" LT. BROWN, GRAVELLY SILT LOAM 20"-60" MED. BROWN, SANDY LOAM SOME DECOMPOSED SHALE	
HOLE: I 0'-6" TOPSOIL 6'-64" LT. BROWN, GRAVELLY SANDY LOAM	
PATRICK HUTTON MJS 12/19/13 HOLE: J 0'-6" TOPSOIL 6'-7" MED. BROWN, SAND W/SILT AND GRAVEL SOME SHALE 6', LEDGE 7'	
HOLE: K 0'-6" TOPSOIL 6'-36" LT. BROWN, GRAVEL SILT LOAM 36"-7" MED. BROWN, GRAVEL SILT LOAM WITH COBBLES	
HOLE: L 0'-8" TOPSOIL 8'-4" LT. BROWN, GRAVEL SILT LOAM 4'-7" MED. BROWN, GRAVEL SILT LOAM WITH COBBLES	
HOLE: M 0'-6" TOPSOIL 6'-36" LT. BROWN, GRAVEL SILT LOAM 36"-7" MED. BROWN, GRAVEL SILT LOAM WITH COBBLES	
JOINT SITE INSPECTION: PATRICK HUTTON MJS AND EDWARD BEHNKE OCHD 12/19/13 HOLE: J-A 0'-6" TOPSOIL 6'-70" SAND W/SILT AND GRAVEL BEDROCK @ 7', SHALE FRAGMENTS BELOW 6'	
HOLE: J-B 0'-6" TOPSOIL 6'-60" SAND W/SILT AND GRAVEL BEDROCK @ 6', SHALE FRAGMENTS BELOW 4'	
HOLE: J-C 0'-6" TOPSOIL 6'-70" SILT W/GRAVEL AND COBBLES MOTTLING @ 6'	
HOLE: J-D 0'-6" TOPSOIL 6'-39" SILT W/GRAVEL 39"-66" SILT W/GRAVEL AND SOME CLAY, SHALE FRAGMENTS	
HOLE: J-E 0'-6" TOPSOIL 6'-40" SILT W/GRAVEL 40"-7" SILT W/GRAVEL, SHALE FRAGMENTS	
HOLE: J-F 0'-6" TOPSOIL 6'-42" SILT W/GRAVEL 42"-7" SILT W/GRAVEL, SHALE FRAGMENTS	

SEPTIC DESIGN BASIS PROPOSED SYSTEM A: 26 SEWERED CAMP SITES

FLOW: (26) 75 GPD/SITE = 1950 GPD
SEPTIC TANK REQUIRED 1.5 X 1950 = 2,925
3,000 GALLON SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 16-20 MIN./INCH
AREA REQUIRED: 1950/70 = 2,786 SF
LINEAR FEET TRENCH REQUIRED: 2,786/2 = 1,393 LF
USE 14 TRENCHES AT 100 FT. = 1,400 LF
2 FIELDS 700 LF EACH
DOSE VOLUME REQUIRED:
100% VOL: 700LF X 0.853 GAL/LF = 457 GAL PER FIELD
75% = 457 GAL X 0.75 = 343 GAL - 85% = 457 GAL X 0.85 = 389 GAL
PROVIDE FLOUT DOSING TANK AS PER DETAIL C-7/7 12" DRAW
SYSTEM TO BE ALTERNATELY DOSED

SEPTIC DESIGN BASIS PROPOSED SYSTEM B: 59 SEWERED CAMP SITES

FLOW: (59) 75 GPD/SITE = 4425 GPD
SEPTIC TANK REQUIRED 1.5 X 4425 = 6638 GAL
7,000 SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 31-45 MIN./INCH
AREA REQUIRED: 4425/0.50 = 8850 SF
LINEAR FEET TRENCH REQUIRED: 8850/2 = 4425
FIVE FIELDS WITH 885 LF OF TRENCH = 4425 LF TOTAL
USE 14 TRENCHES AT 90 FT. = 900 LF
SYSTEM TO BE SEQUENTIALLY DOSED:
100% VOL: 900LF X 0.853 GAL/LF = 549 GAL PER FIELD
75% = 549 GAL X 0.75 = 412 GAL - 85% = 549 GAL X 0.85 = 467 GAL
PROVIDE FLOUT DOSING TANK AS PER DETAIL 14" DRAW
SYSTEM TO BE ALTERNATELY DOSED

SOIL DEEP TESTS

PATRICK HUTTON MJS 7-1-14 HOLE: A 0'-14" TOPSOIL 14'-7" LT. BROWN, SILT LOAM WITH SHALE FRAGMENTS @ 6"	
HOLE: B 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: C 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: D 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: E 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: F 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: G 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: H 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: I 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: J 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: K 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: L 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: M 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: N 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: O 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: P 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: Q 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: R 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: S 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: T 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: U 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: V 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: W 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: X 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: Y 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	
HOLE: Z 0'-14" TOPSOIL 14'-60" LT. BROWN, SILT LOAM	

SEPTIC DESIGN BASIS PROPOSED SYSTEM C: 60 SEWERED CAMP SITES

FLOW: (60) 75 GPD/SITE = 4,500 GPD
SEPTIC TANK REQUIRED 1.5 X 4,500 = 6,750
7,000 SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 21-30 MIN./INCH
AREA REQUIRED: 4,500/0.60 = 7,500 SF
LINEAR FEET TRENCH REQUIRED: 7,500/2 = 3,750 LF
FOUR FIELDS WITH 950 LF OF TRENCH EACH = 3,800 LF TOTAL
USE 10 TRENCHES AT 95 FT. = 950 LF
SYSTEM TO BE SEQUENTIALLY DOSED:
100% VOL: 950LF X 0.853 GAL/LF = 810 GAL PER FIELD
75% = 810 GAL X 0.75 = 608 GAL - 85% = 810 GAL X 0.85 = 689 GAL
PROVIDE FLOUT DOSING TANK AS PER DETAIL 15" DRAW
SYSTEM TO BE ALTERNATELY DOSED

SEPTIC DESIGN BASIS PROPOSED EXPANSION EX. SYSTEM 3: 20 SEWERED CAMP SITES

FLOW: (20) 75 GPD/SITE = 1,500 GPD
SEPTIC TANK REQUIRED 1.5 X 1,500 = 2,250
2,500 SEPTIC TANK TO BE PROVIDED
PERCOLATION RATE: 46-60 MIN./INCH
AREA REQUIRED: 1,500/0.45 = 3,334 SF
LINEAR FEET TRENCH REQUIRED: 3,334/2 = 1,667 LF
USE 24 TRENCHES AT 70 FT. = 1,680 LF
2 FIELDS 840 LF EACH
SYSTEM TO BE ALTERNATELY DOSED:
100% VOL: 840LF X 0.853 GAL/LF = 549 GAL PER FIELD
75% = 549 GAL X 0.75 = 412 GAL - 85% = 549 GAL X 0.85 = 467 GAL
PROVIDE FLOUT DOSING TANK AS PER DETAIL 14" DRAW
SYSTEM TO BE ALTERNATELY DOSED

PERCOLATION TEST:

PATRICK HUTTON MJS 11/19/13 DATE: 11/19/13 STOP WORKED TIME HOLE: 1 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	8:44
2	12:27
3	12:40
4	28:05
HOLE: 2 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	15:17
2	20:00
3	22:50
4	23:00
HOLE: 3 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:40
2	16:33
3	19:55
4	22:12
5	22:24
HOLE: 4 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	5:10
2	9:15
3	11:25
4	11:40
HOLE: 5 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	6:00
2	9:20
3	9:40
4	9:42
HOLE: 6 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	10:00
2	16:20
3	19:30
4	19:50
HOLE: 7 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	21:22
2	37:43
3	45:03
4	46:30
HOLE: 8 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	18:10
2	18:11
3	25:38
4	25:40
HOLE: 9 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	17:07
2	25:30
3	26:15
HOLE: 10 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	5:26
2	10:24
3	10:36
HOLE: 11 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	10:24
2	14:45
3	15:10
HOLE: 12 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	12:09
2	16:21
3	18:58
HOLE: 13 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	12:20
2	16:51
3	16:58
HOLE: 14 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	7:20
2	10:30
3	10:52
HOLE: 15 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 16 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 17 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 18 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 19 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 20 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 21 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 22 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 23 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 24 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 25 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 26 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 27 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 28 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 29 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 30 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 31 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 32 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 33 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 34 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 35 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 36 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 37 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 38 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 39 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 40 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 41 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 42 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 43 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 44 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 45 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 46 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 47 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 48 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39
2	15:43
3	18:08
4	18:34
HOLE: 49 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	3:35
2	6:37
3	7:45
4	8:26
HOLE: 50 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	19:16
2	35:42
3	46:20
4	48:09
HOLE: 51 DEPTH OF HOLE: 24"	
RUN NO.	TIME
1	11:39